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BUILDING TYPES STUDY: RESORT HOTELS AND CONDOMINIUMS
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IN PRAISE OF A MONUMENT TO LYNDON BAINES JOHNSON
1972 F. W. DODGE CONSTRUCTION OUTLOOK
FULL CONTENTS ON PAGES 4 AND 5

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Nine Dover Oildraulic Elevators installed in various buildings of the complex by Dover Elevator Company, Chicago.
Photographs: Hedrich-Blessing

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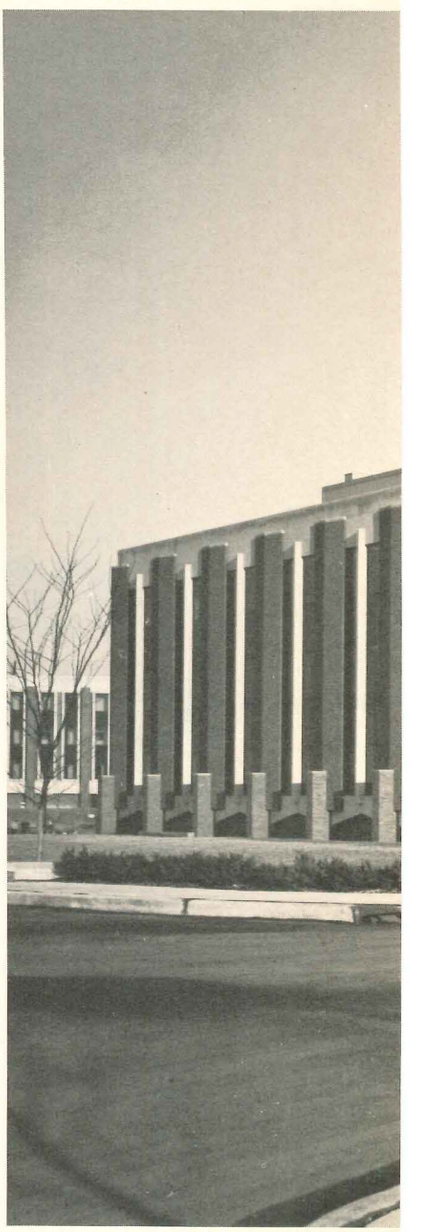

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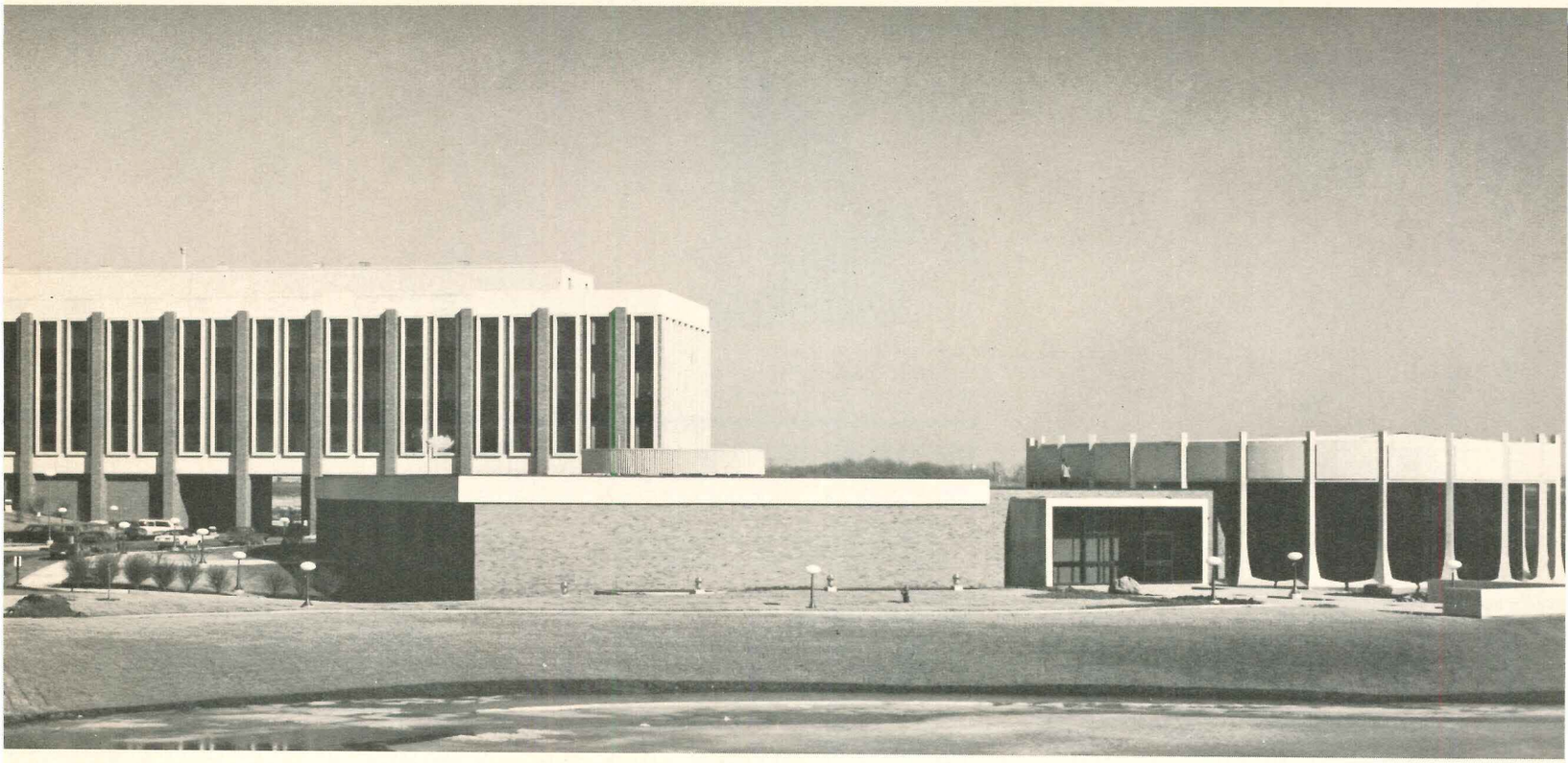

Cover: Ski resort at Avoriaz in the French Alps
Architects: Atelier d'Architecture
Photographer: Lee English Biel

THE RECORD REPORTS

ARCHITECTURAL BUSINESS

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FEATURES

BUILDING TYPES STUDY 428

ARCHITECTURAL ENGINEERING

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ITEK's Corporate Office... incorporates high-strength steel for interior flexibility and exterior beauty

High-strength structural steel played a predominant role in providing a column-free interior and an attractive exterior for this two-story corporate office building in Lexington, Massachusetts.

Neal Mitchell Associates, Inc., architects and engineers for the project, developed a framing scheme utilizing 58-ft-long trusses to insure maximum freedom for future space division.

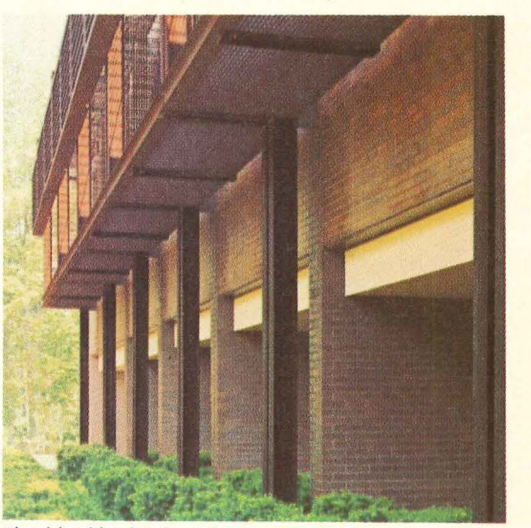
Columns are spaced on 5-ft centers thus providing independent support for the second floor and roof levels. This contributed substantially to simplifying and speeding up erection of the frame. Top and bottom chords of the 2-ft, 6-in.-deep trusses are fabricated of ASTM A572 Grade 50 (Bethlehem V50) high-strength steel.

The floor system is designed for a live load of 100 psf and consists of a 4½-in. concrete floor slab placed atop permanent steel forming. The sandwich area within the 2-ft, 6-in.-deep trusses is layer-zoned for the electrical, heating, air-conditioning, sprinkler, and plumbing systems. Integration of these systems into the clear-span frame provides for complete partition flexibility.

Mayari R Weathering Steel sunscreens

The harmonious blend of Mayari R Weathering Steel and hard-burned, iron-spot brick adds warmth and beauty to the building's exterior.

A 2-story, skylighted courtyard separates the senior executive offices from the L-shaped, 2-level tier of supporting staff offices.



Shrubbed beds of crushed stone serve as drains to catch the oxidized run-off from the maturing Weathering Steel.

Owner: Itek Corporation; Architect-Engineer: Neal Mitchell Associates Incorporated; Fabricator and Erector: Novel Iron Works, Inc.; General Contractor: Lewis C. Bowers, Inc.

The sunscreens, which protect the exterior office windows from outside elements, are fabricated of high-strength Mayari R Weathering Steel. They are supported by Mayari R rolled sections which are completely independent of the building's structural steel frame. As it weathers, Mayari R forms a richly-textured, deep-brown coating, which gradually minimizes oxidation of the steel and eliminates the need for painting.

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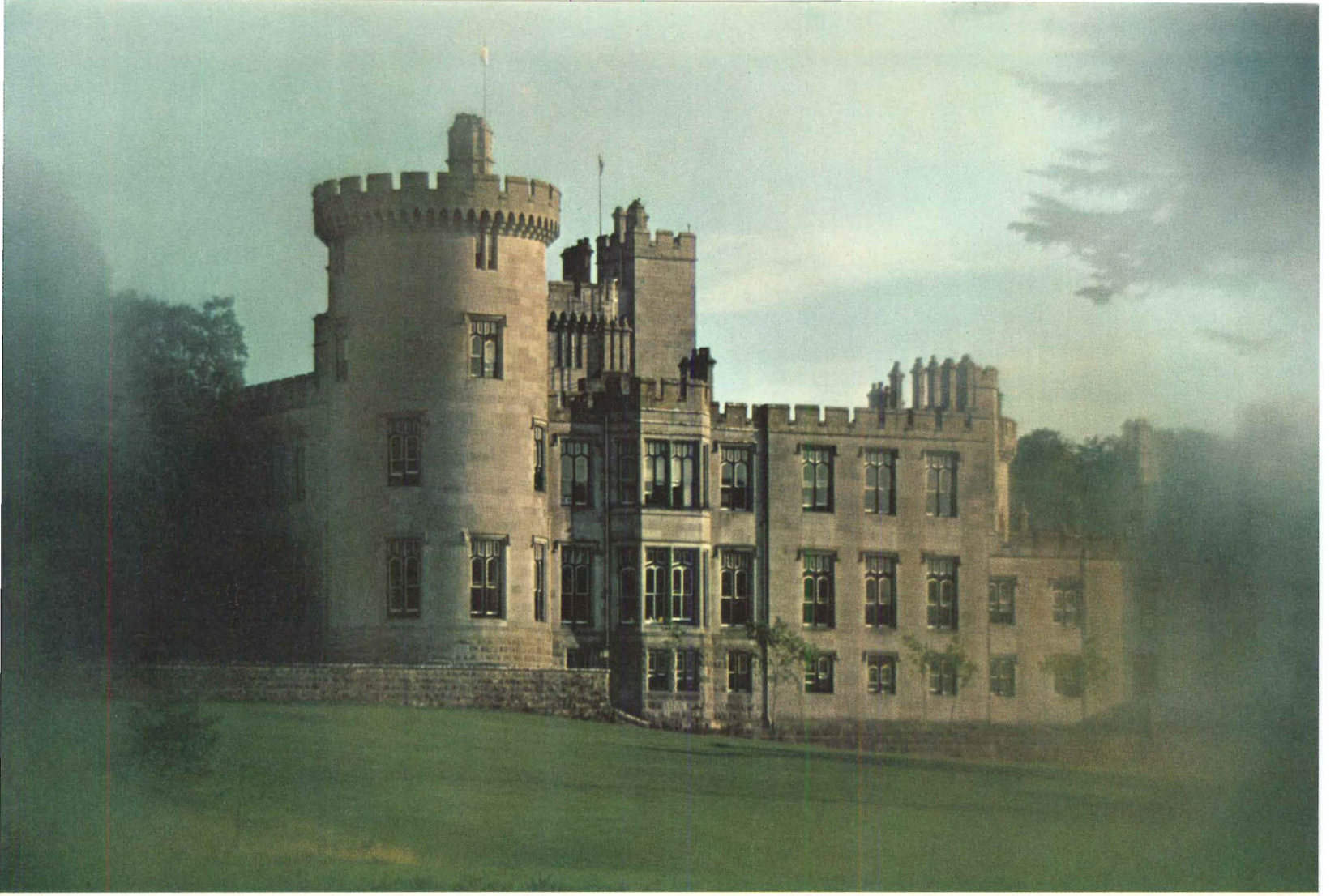
BETHLEHEM STEEL

Main office entrance. Loose bricks, placed in sand around base of Weathering Steel columns to catch oxidized run-off, will be replaced and mortared after the steel matures.



Dromoland Castle, County Clare, Ireland. Built between 1700 and 1800. Remodeled in 1962 by Milosevich and Trautwein, A.I.A.

You can't make a power plant look like a tree OR waste not, want not

Last month, ARCHITECTURAL RECORD sponsored a Round Table seminar on the conservation of energy. We'll have a piece in the January issue summing up the issues raised and solutions suggested by the truly impressive group of participants. But I find I'd like—ahead of the main event—to sum up some of the reasons for holding this conference, and thus to try and increase interest in what seems a startling problem lying ahead for the building industry—the increasing shortages of energy to power the building boom.

The idea of the Round Table got started when, some months ago, I read at just about the same time, three separate news releases:

■ A proposal from President Nixon to Congress began: *"For the most of our history, a plentiful supply of energy is something the American people have taken very much for granted. . . . But the assumption that sufficient energy will always be readily available has been brought sharply into question within the last year.* The brown-outs that have affected some areas of our country, the possible shortages of fuel that were threatened last fall, the sharp increase in certain fuel prices and our growing awareness of the environmental consequences of energy production have all demonstrated that we cannot take our energy supply for granted any longer." After detailing many of the problems in supply technology (like sulphur oxide control, breeder reactors, coal gasification, and even—impressively—magnetohydrodynamic power cycles) the President reached a point even I could understand: he directed HUD Secretary Romney to revise the standards for insulation of Federally-insured houses, requiring "sufficient insulation to reduce maximum permissible heat loss by about one-third for a 1,200 square foot home—and by even more for larger homes;" estimating that "the fuel savings which will result each year . . . will, in an average climate, equal the cost of the additional insulation required."

Well, a third of the fuel used by houses is quite a bit of fuel. And so you begin to wonder whether, if we not only insulated all of our booming *non-residential* construction better, but (for a few examples) used better quality (notably heat-resistant or reflective) glass; 2) considered the siting of buildings more carefully from the point of view of heat loading by the sun; 3) worried a little more about sun-shading and glass area; 4) used more sophisticated control that could anticipate changes more quickly; 5) used more efficient air-handling systems; 6) reconsidered the heat-loading effect of the light that, in general, we keep pouring more and more of into buildings, and 7) maybe even reconsidered the use of operable windows so that, in the morning, instead of grinding away on the central air conditioning we could simply let in the cool morning air, we might save another big bundle of heating fuel and electric power.

■ The second news release that I read was a speech made back in May by C. E. Peck, Owens-Corning Fiberglas construction group vice-president, to the Ohio Mortgage Bankers, in which he said simply and effectively:

"Inefficient buildings are wasting millions of barrels of heating oil, millions of cubic feet of gas, and millions of kilowatts of electricity each year. And all of that waste fuel is spewed out into the air as pollution. . . . The problem of inefficient buildings is caused by over-emphasis on low first cost. But, higher first costs for efficient design will be repaid by lower operating costs year after year." Which opened up the whole idea of just how much it would cost in these days of out-of-control construction costs and these days in which practically everything favors lower first cost, alas, to do something effective about energy waste.

■ And the third release I read was one from the New York Chapter of the AIA, specifically from its Natural Environment Committee. In a release that got a lot of attention in the local newspapers, this activist (thank goodness) committee raised a number of critical questions, including some suggested above:

1. *"There is a direct relation between energy resources and air pollution. . . .* Of immediate concern is the question of fossil-fuel plants in cities. . . . To expand these plants and thereby contribute further to the contamination of the air could be perilous to health. . . . In our quest for badly needed new sources of energy, some are tempted to accept building of atomic plants in and around urban areas. But there is no such thing as an atomic plant with absolute safety. [And] in addition, there is always the problem of nuclear wastes plus the thermal and radioactive pollution of waterways."

2. *"The opposite approach to the power and pollution dilemma is the need for conservation of energy, rather than necessarily expanding production."*

3. *"Related to conservation of energy is the need to design projects to use less energy and resist pollution as well."* Here, the AIA committee suggested taking "greater advantage of natural light and ventilation," recognizing that consideration of these factors "could create very different typical structures than those being built"; and perhaps more dramatically called for "the full use of buildings during all hours," arguing that "The amount of urban struc-

—Drawn for the RECORD by Alan Dunn

"The question is not public interest versus private property! The question is will you design me a million-dollar house?"

ture could be reduced by applying the principle of multiple and sequential use in design criteria. . . . Empty buildings can be a disaster for neighborhoods, but fully utilized structures could liberate other areas to become green."

I found ideas like these—whether or not they were all practical or applicable—intensely exciting; and as noted at the start of this piece, a Round Table was conceived to explore these in some depths. Again, I don't want to tip all the concepts developed at that meeting at this early date—for it is much too early for anyone (me, at least) to have absorbed and sorted out the ideas and arguments and counter-arguments presented. But I do want to say that we invited—to discuss this problem of energy conservation—some of the country's leading architects, engineers, builders, government officials, lenders, and building owners—including a man who serves probably the biggest client in the history of the world, Arthur P. Sampson, Commissioner of the Public Buildings Service.

The first question raised—and it was explored in various ways throughout the day-and-a-half-long meeting—was a basic one: "Is there really a power shortage?" Two speakers uniquely qualified to answer addressed themselves to that problem, and their points of view offer food for thought for architects, engineers, owners, manufacturers and utilities alike. Oddly enough, it is not a simple question to answer. For as the statement of purpose of the Round Table reads: "Only in some parts of the country, plagued with brown-outs or real shortages of low-sulphur-content fuel, can the situation be called a crisis. But in most areas, the construction boom that lies ahead, plus:

1) the fact that our demands for electricity have doubled since 1960 and will double again by 1980;

2) the constantly increasing costs of power generation (a factor which, by itself, could change the economics of low first cost vs. lower operating costs);

3) environmental opposition to new generating plants, mining and drilling operations. . .

suggest that energy conservation is very much in order."

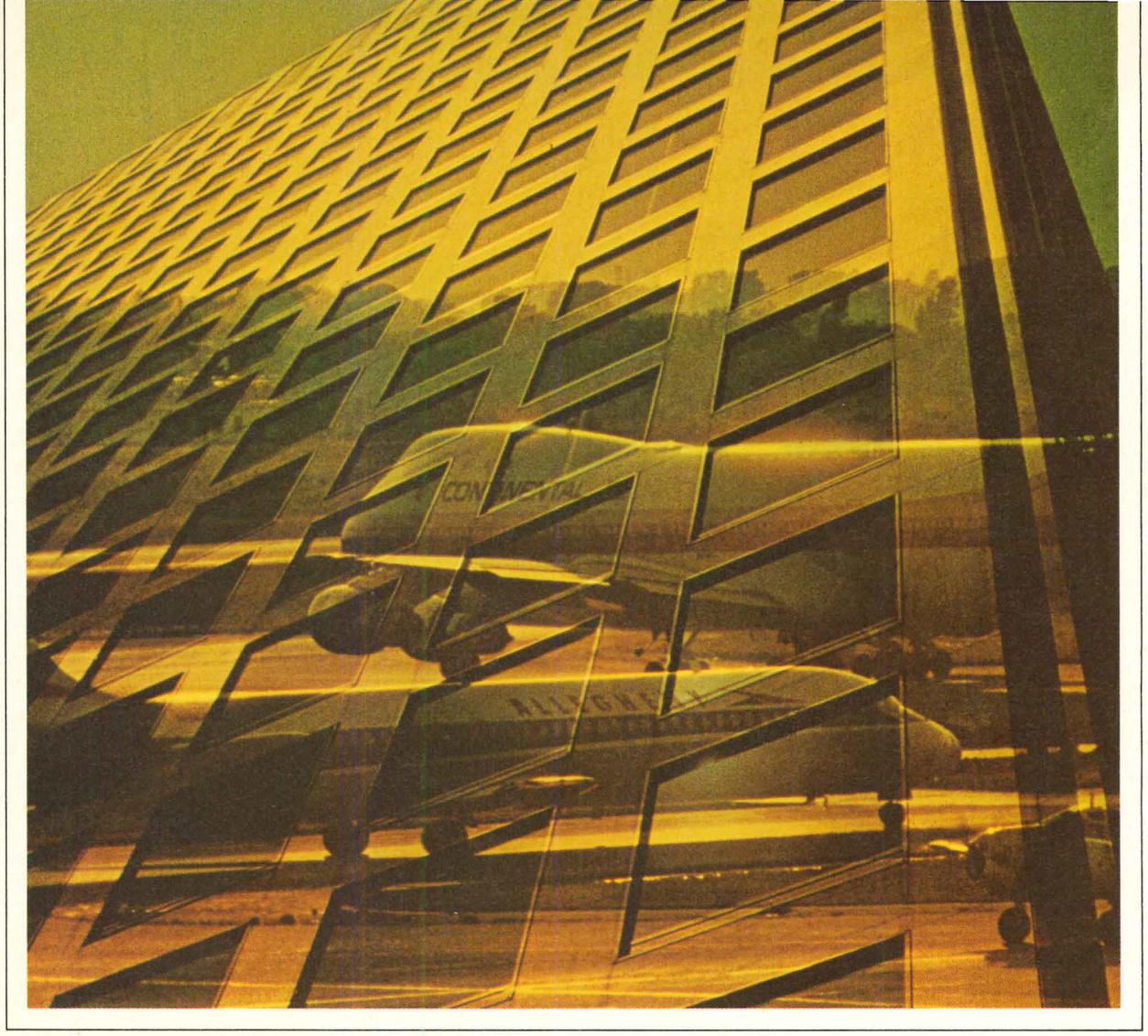
The need for conservation was underscored by a source which, until lately, I would have thought an unlikely source —a utility executive. Bertrand Schwartz, systems planning vice president of Consolidated Edison, New York City's utility, argued this way: "Historically, the conventional wisdom in looking at electric utility companies and investing in them, or trying to develop them, or trying to attack them, was that their promotional programs were important to their economic viability. For example, they sold air conditioning equipment for the air conditioning manufacturers in the 1950's and 1960's, and some of them still do today. They promoted load growth. . . . But today that conventional wisdom would no longer apply. It is economic idiocy right now to promote increases in your peak loads." He points out why: "Our investment today works down to a cost, per kilowatt of generation, to about $150. A new fossil fuel plant would cost us twice that today—$320 a kilowatt. The fact that a new modern efficient power plant would cost twice the average investment we have today should show you that—with the regulatory lag, [before rates can be increased]—it makes no economic sense whatever for Con Edison or any utility company to promote its peak loads. And so, when you see utility companies joining the conservation bandwagon, perhaps you can have some faith in what they say—because it is now in their interest."

Mr. Schwartz points out that the utilities will, of course, have to build: "We cannot sit in an air-conditioned office and tell those who do not have air conditioning that they can't have it. . . . We are obligated by law to provide an adequate supply of electricity . . . and we are going to have to build again what we have today within the next decade." And he is realistic about opposition to new plants: "Each and every type of plant that you want to build has objections to it. And these plants are objectionable. We can concern ourselves with esthetics, we can concern ourselves with emissions, but we cannot make a power plant look like a tree." And what he—and I hope executives of other utilities across the country—is working for is "a proper balance."

And the need for conservation of energy was reinforced by the dinner speaker at the Round Table, Hollis M. Dole, who is Assistant Secretary for Mineral Resources of the Interior Department: "Today's climate of threatened energy scarcity and deepening dependence upon foreign sources . . . confers a special note of relevance—indeed, even urgency—to the discussions [of this Round Table]." If it is true that we are in for a long period of austere conditions relating to energy supply, then it makes eminent good sense to do what we can about conserving the supply that we have. . . . For years and years we have wasted unconscionable amounts of our non-renewable resources just because the prices we paid did not reflect their true cost, and we therefore thought them to be cheap and readily available. Now the discipline of scarcity is forcing us to husband and respect what we have wasted and abused. The reform is long overdue."

Well, as I noted at the beginning of this long essay, architects and engineers—and the builders and owners and lenders and manufacturers they work with—are in a strong position to do something about some of this waste. The buildings we build use about a quarter of all the energy consumed in this country—either as heating fuel or electricity. So a little saving, or a combination of little savings—through more efficient design—can go a long way. I hope that in the January issue we can show how it can be done.

—*Walter F. Wagner Jr.*



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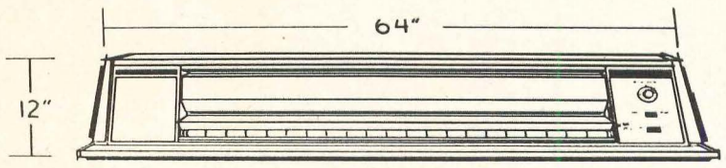

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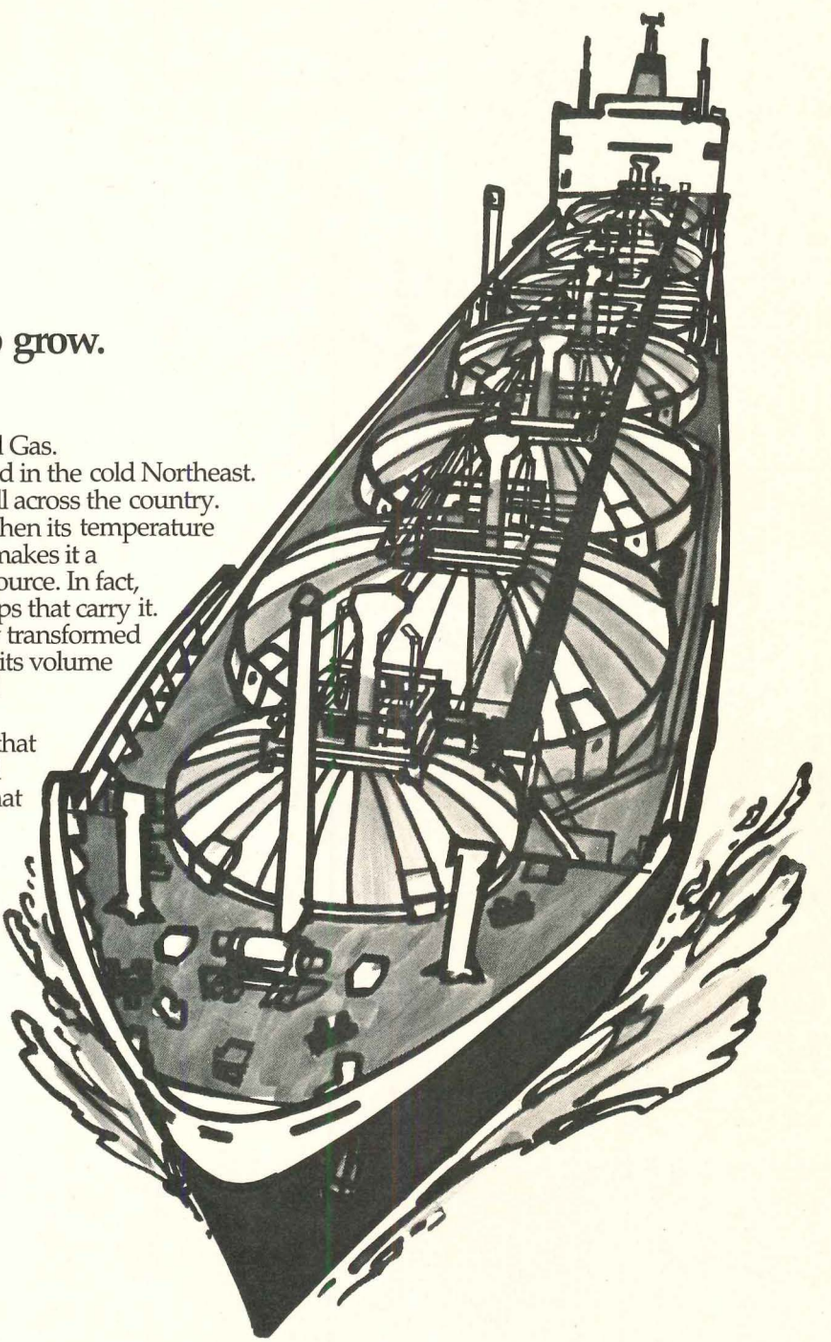

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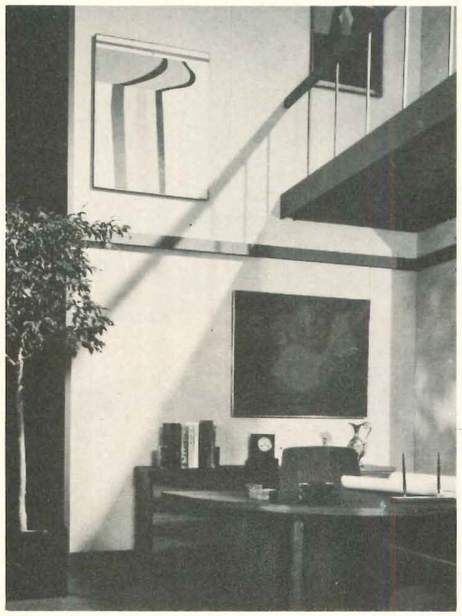

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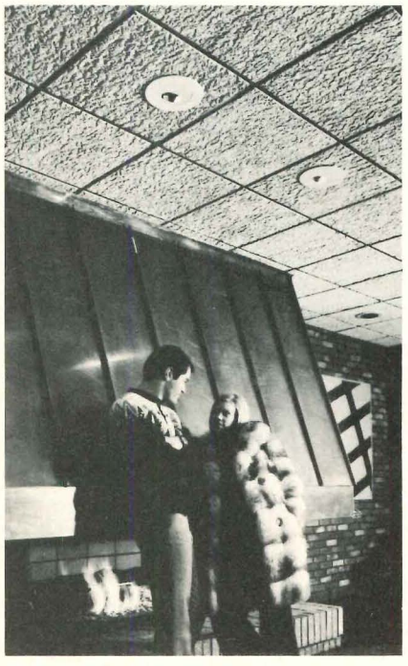

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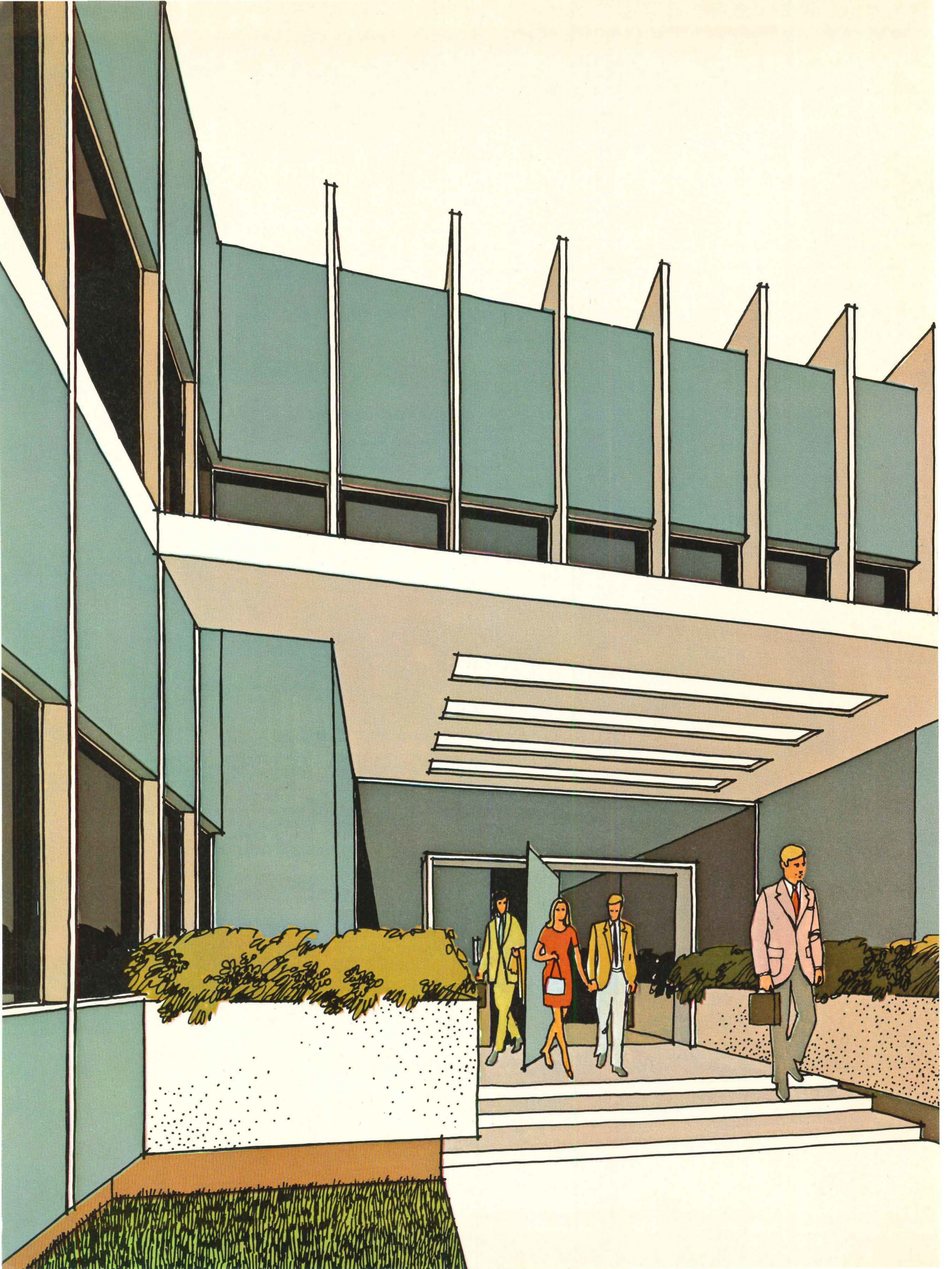

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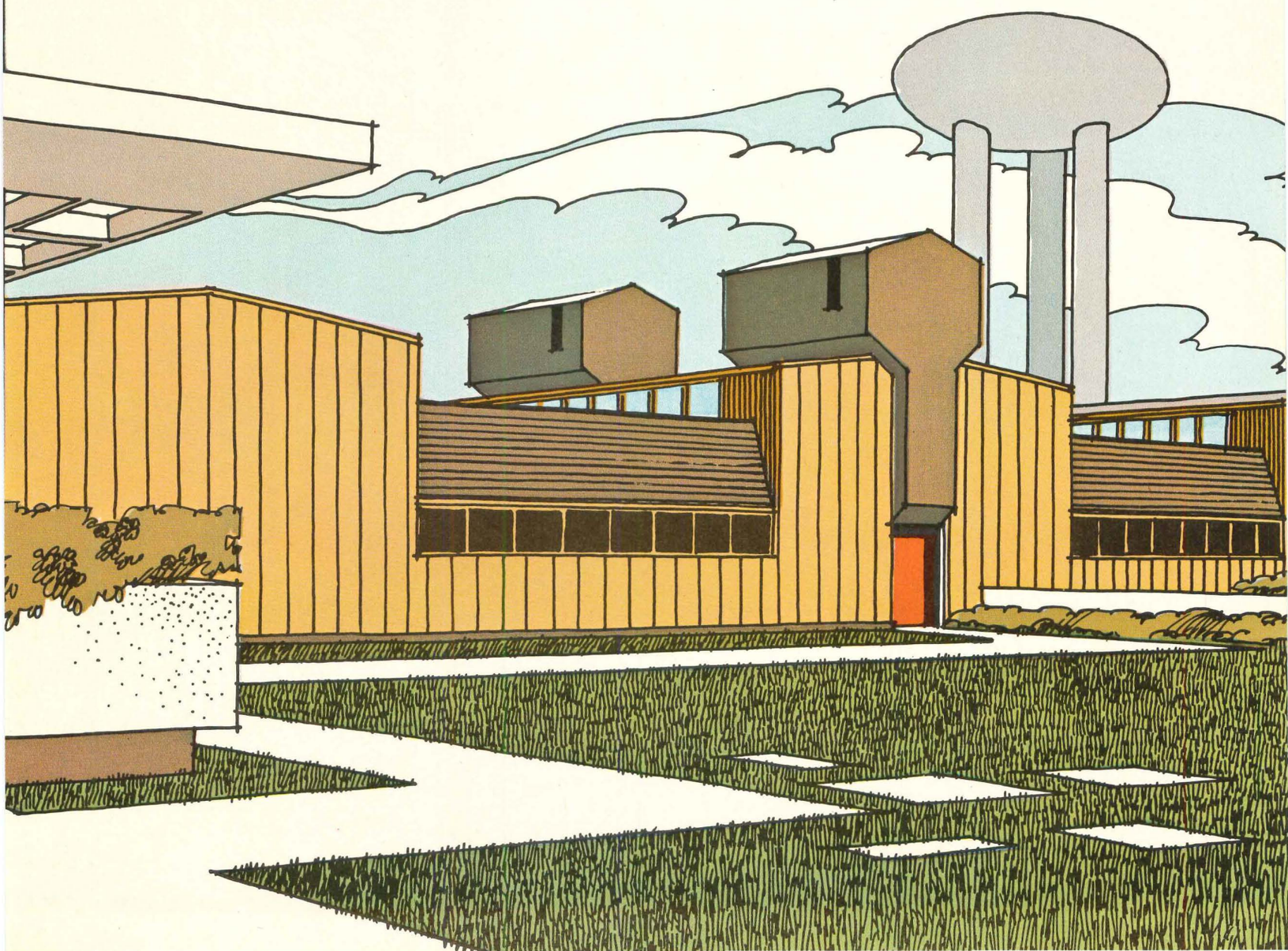

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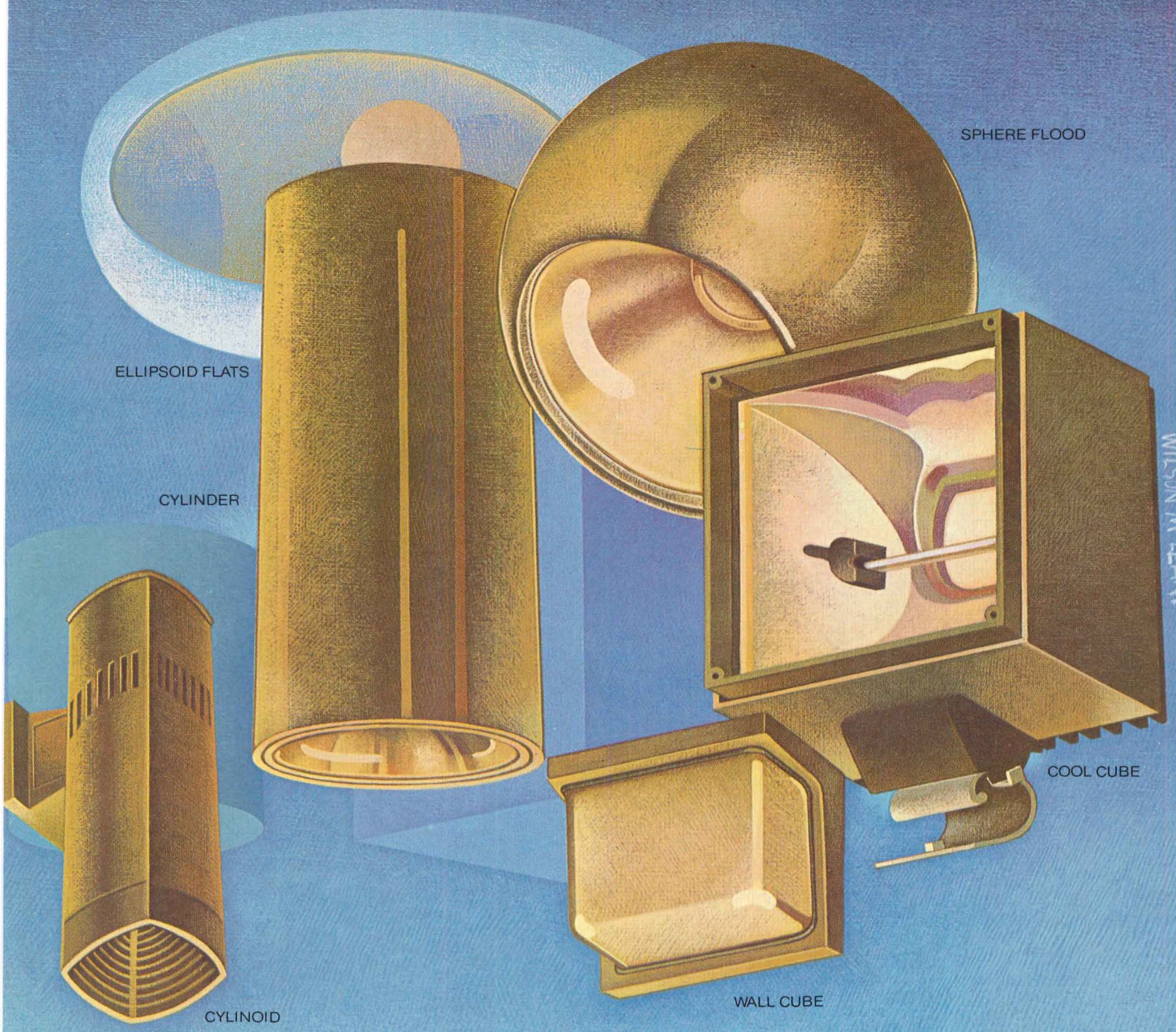
We did it by going back to the basic shapes of modern architecture— —the cube, the sphere, the cylinder. Then we designed fixtures with clean, uncluttered lines to match these geometric forms. Now, by selecting from a wide choice of new Stonco lighting fixtures you can design area lighting as an integral part of your building plan.

A brilliant example: Cool Cube
Consider the quartz area flood. Most conventional types are distracting in shape, unfinished in appearance. But Stonco designed Cool Cube—up to 1500W of tungsten halogen lighting—as a compact cube that has all the inherent quality a fine building exterior demands. It's made with extruded aluminum satin-polished and anodized to a deep bronze



finish. And a new socket design, integral with the housing, provides a more efficient heat sink.

Plus a square luminaire
Another example: the usual outdoor bracket is rounded, bulky and a problem to adapt to walkways and tunnels. Not Stonco's new Wall Cube.® We fashioned it as a crisp, square unit that mounts in almost any position on any surface to direct all the light you need, wherever you need it.

And, for variety...
To relieve the rectangular look, Stonco also offers you architectural-quality fixtures in other basic shapes: cylindrical area floods, new Arealume® pole-top designs, Cylinoid Downlights,® prismatics and opals. All are styles to blend into your plan, alone or in combination with other Stonco geometric fixtures.

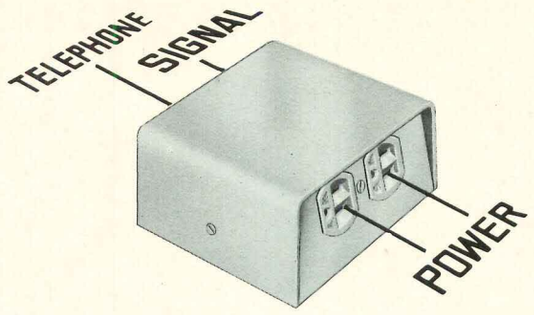
How can you learn more?
Our new brochure, "The Shape of Architectural Lighting," illustrates all the styles, features and options that the latest Stonco geometric area fixtures offer you. For your copy, simply circle the reader service card. Or write for details to Keene Corporation, Stonco Lighting, 2345 Vaux Hall Rd., Union, N.J. 07083.

KEENE
CORPORATION

STONCO LIGHTING

We've just begun to grow.

For more data, circle 10 on inquiry card



CEL-WAY®/COFAR®

The blended floor system for in-floor electrification

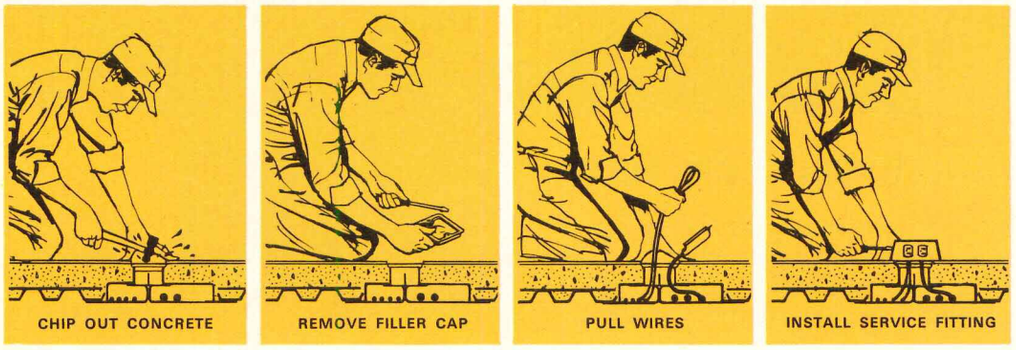
It's a combination that adds up to a complete system. Cel-Way supplies power, telephone and signal service in the floor slab to any desired location. It includes dual or triple electrical cells, with factory-installed inserts for easy access to cells, and a variety of large capacity feeder systems. Cel-Way features compact 4″ x 4″ floor fittings for triple, dual or single service. For the structural deck, Granco's widely used Cofar combined form and reinforcement makes the system complete!

And now spacing between cells and factory-set inserts can be optimized. Granco's computer can help you in planning by analyzing desk layouts, desk sizes, services required, floor area, etc. This provides cell and insert spacing modules to assure efficient coverage . . . for present and future needs.

See Sweet's 16.2/Gr, or write for new design manual 99-9. Granco Steel Products Co., 6506 North Broadway, St. Louis, Mo. 63147. A subsidiary of Granite City Steel.

Makes service changes faster... and at greatly reduced cost

38% of business telephones are changed or relocated each year. A significant percentage of power and signal service outlets, too, must be changed, relocated or added annually to meet business demands. Cel-Way's factory-set inserts make changes or additions fast, clean and far less expensive by eliminating costly, messy concrete core drilling.



IMAGINATION IN STEEL GRANCO® Steel

For more data, circle 11 on inquiry card

Wellco® Carpet of Herculon® just netted some Deer Isle Sardines

...and tossed 'em back.

One thing that Wellco's rugged "Incredible" carpet of HERCULON* olefin fiber didn't need was a fresh catch. Even one as good as Deer Isle Sardines. But, that's what it got . . . soaked with oil. It all cleaned up, though, quick and easy.

The stain resistance of HERCULON coupled with uncommon resistance to abrasion and fading, gives you the ideal carpet for any commercial installation. Deer Isle Sardines didn't stick with Wellco's "Incredible" carpet. But your clients will. Because this Wellco level loop tufted carpet is made with spun yarn of HERCULON.

For information contact Fibers Merchandising Dept. 118, Hercules Incorporated, Wilmington, Delaware 19899.

F-T-71-118

Specify carpet of Herculon® by Wellco®

HERCULES

*Hercules registered trademark

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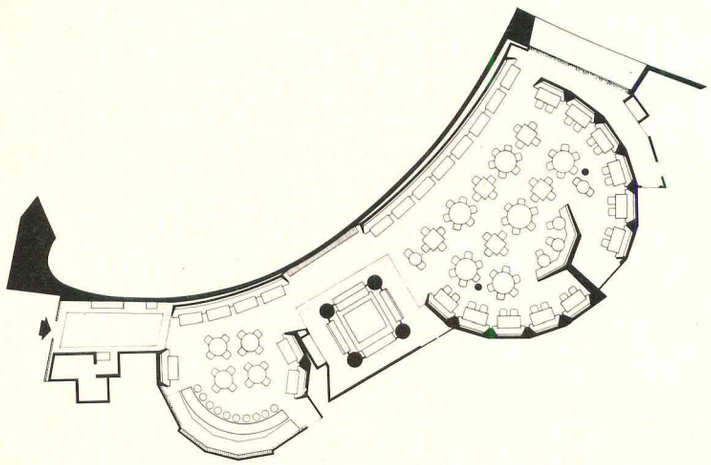


(Top) Valley General Hospital, Renton, Wash. Architect: Edward Durell Stone. Photographer: Morley Baer. (Bottom) "Le Monde" Restaurant. New York, N.Y. Architect: Warren Platner. Photographer: Alexandre Georges.

THE EDITORS OF ARCHITECTURAL RECORD INVITE SUBMISSIONS FOR

RECORD INTERIORS

to be featured in the January 1972 issue

. . . a program to recognize outstanding interiors designed by architects.

In 1970, in response to the upsurge of activity and interest in design of interiors by architects, Architectural Record established a new editorial program—RECORD INTERIORS.

It is clear that the interest of the profession in interiors is growing and strengthening. And thus the interiors program—with citations to document and stimulate this significant area of expanded practice—will be continued. Recently completed architect-designed interiors of all building types will be considered—remodelings and renovations as well as new structures—anywhere in the United States. Selections will be made by the editors on the basis of the excellence of the design solution for the particular client's individual program. Submissions from architects of new, unpublished work will be welcomed through November 1, 1971. No formal presentations are required, though materials submitted should include plan, photographs or snapshots, and brief description and program.

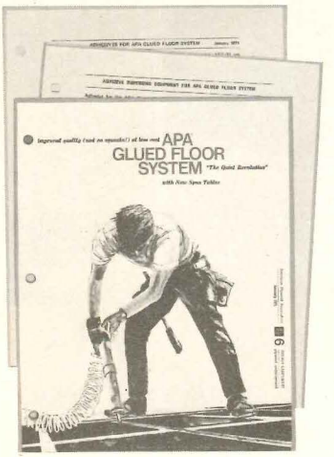
RECORD INTERIORS of 1972 will be published in the January 1972 issue of Architectural Record.

Write or telephone:

Barclay Gordon, Editor in Charge
Interior Design Awards Program
Architectural Record

New information on plywood building systems and design.

For free books, use Reader Service Card.



APA® Glued Floor System Package. New information on the no-squeak, no nail pop, no callback floor. Six new span tables. Application sequence. Cost comparison examples. Materials recommendations. Lists of glue manufacturers and equipment suppliers.

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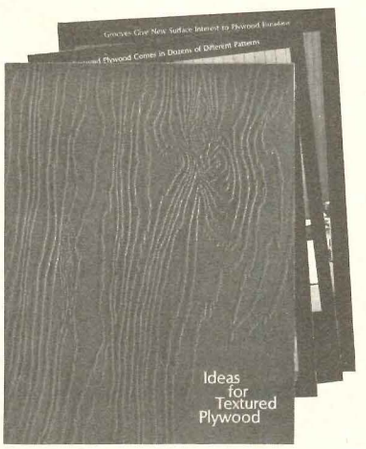

Textured Plywood Portfolio. We've added to the APA textured plywood idea collection. Full-color photos show varieties, patterns, species. Paneling and siding suggestions for office buildings, apartments and restaurants. Application and finishing suggestions, brand names, list of manufacturers.

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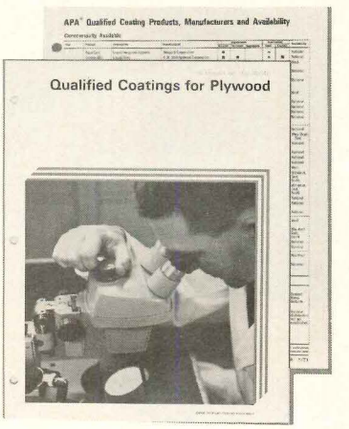

Plywood Coatings Package. All about plywood coatings: durability —weathertight coatings; uses—exteriors, interiors, roofs, decks; appearances—textured, colorfast surfaces; application—chemically coated and overlaid plywoods; and testing.

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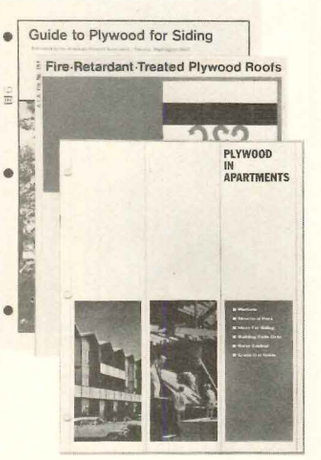

Plywood in Apartments Package. The works on plywood walls, floors, roofs and decks. Span tables. Grade-use guides. 8 pages of sound control data. A new book on *Fire-Retardant-Treated Plywood Roofs:* Requirements, UL tests, insurance rates, code acceptance, details and specs. Plus *Guide to Plywood for Siding.*

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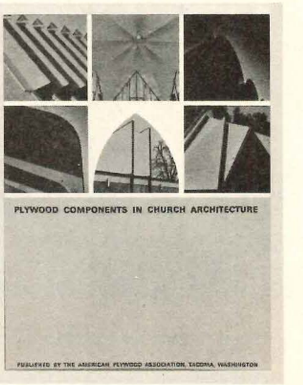

Plywood Components in Church Architecture. A guide to plywood in contemporary church architecture: photographs, design details, cost savings on folded plates, stressed skin panels, box beams, space planes.

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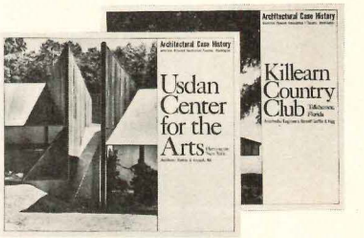


Architectural Case Histories. Two, new, 4-page case histories are examples of plywood's potential for innovation design. 1. *Usdan Center for the Arts,* Huntington, New York. 2. *Killearn Country Club,* Tallahassee, Florida.

Circle 30 on Reader Service Card.

For free books, use reader service card. For more information about plywood and other plywood publications, write American Plywood Association, Dept. AR-111, 1119 A Street, Tacoma, Washington 98401. Or get in touch with one of our field service representatives. Offices: Atlanta, Chicago, Dallas, San Francisco, Tacoma, Washington, D.C.

AMERICAN PLYWOOD ASSOCIATION

Plywood quality-tested by the Division For Product Approval.

594 Corbin... where privacy is assured

When you register with Corbin, privacy is carefully guarded. With Corbin's new hotel mortise lockset, the inside turnpiece not only projects the deadbolt, but also automatically displays a "Do Not Disturb" indicator outside. And an anti-panic feature permits quick emergency exit. Just turning the inside knob retracts the latch and deadbolt simultaneously. Contact a Corbin distributor for information and service or write P & F Corbin, Division of Emhart Corporation, Berlin, Connecticut 06037. In Canada, Corbin Lock Division.

For more data, circle 13 on inquiry card

CORBIN

5P.0.12

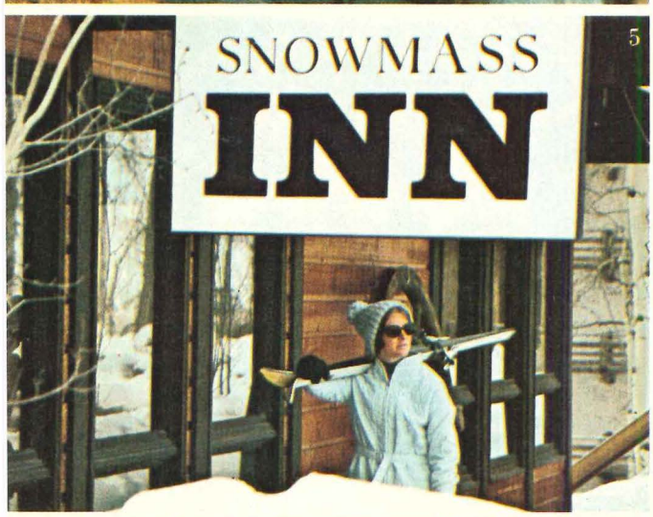
1 and 2. Upper Willows Condominium. Architect: Fredric Benedict & Associates, Aspen, Colo.

3. Arbeiterdorf Employee Apartments. Designers: Zejdlik, Harmala, Hysell and MacKenzie, Inc., Minneapolis, Minn.

4 and 5. Snowmass Inn. Architect: Art Preusch, Aspen, Colo.

6. Shadowbrook II Condominium. Architect: Fredric Benedict & Associates, Aspen, Colo.

7. Tamarack Condominium. Architect: David J. Flood & Associates, Beverly Hills, Calif.



Snowmass Village is Colorado-European. So how come the windows come from Bayport, Minnesota?

Snowmass, Colorado.

The most European ski village in America. A charming cluster of buildings—terraced up the mountainside, centered around a cobblestone mall.

It took inventive architects—working with native Colorado stone and natural wood—to create this unique Rocky Mountain hamlet.

It also took Andersen Windows.

Andersen offered the architects the freedom of design they wanted—with stock wood windows in six styles and hundreds of sizes.

Wood Casements—to harmonize with rustic wood exteriors. Wood Gliding Doors—to lead to poolside sun decks. Wood Picture Windows—to frame majestic mountain scenery.

Just to name a few.

Then, too, the Snowmass architects wanted windows that would seal out biting winter winds. (Skiers, like everybody else, like their winter weather . . . outside.) Here again, Andersen offered the extra weathertightness needed — up to 4 times tighter than ordinary windows.

So that's how come America's most European ski village ended up with windows from Bayport, Minnesota.

But that's only the beginning. For the rest of the reasons, check your Sweet's Architectural or Light Construction File. Or talk to your nearest Andersen distributor.

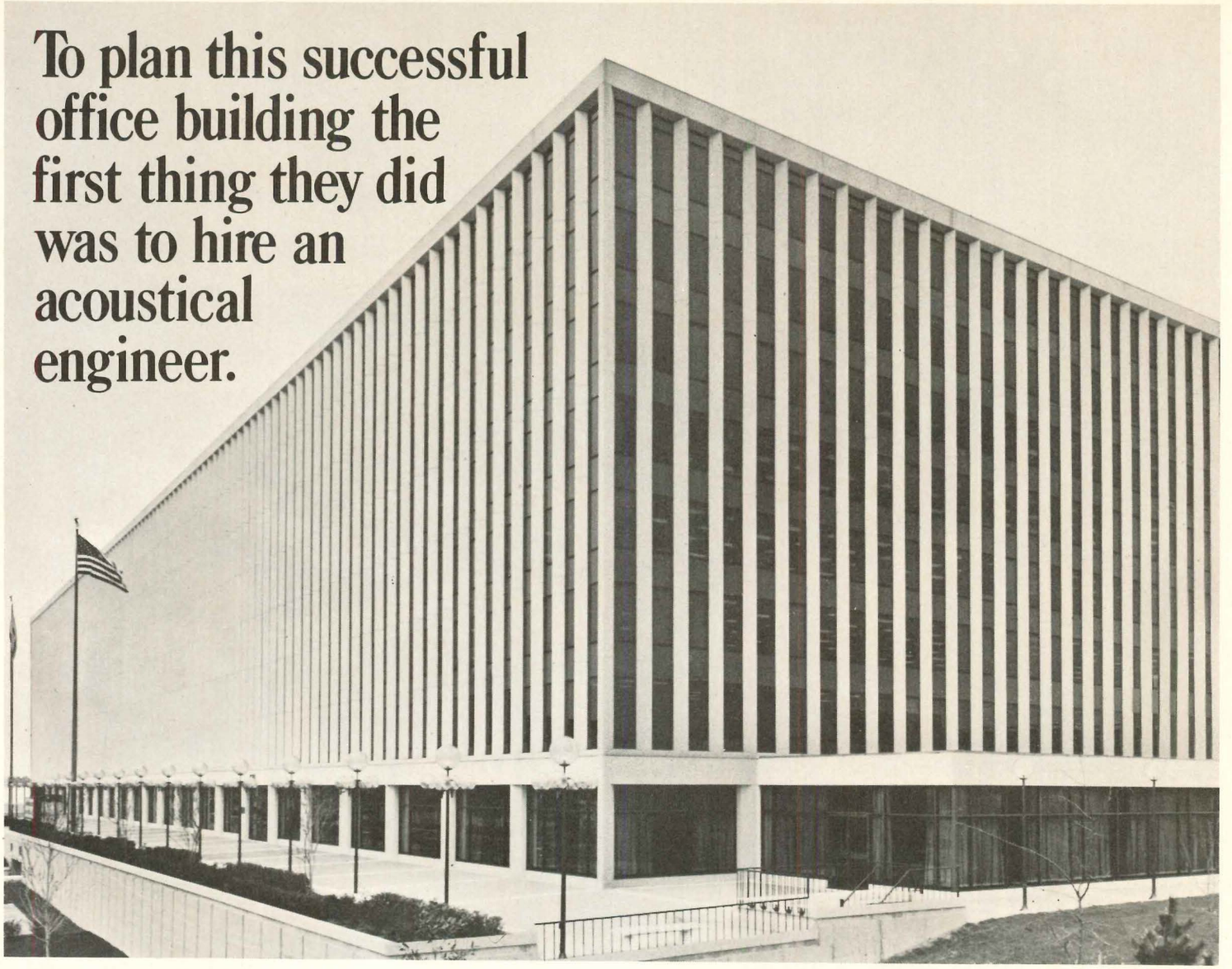
Andersen Windowalls™

Window Beauty is Andersen

Andersen Corporation • Bayport, Minnesota 55003

For more data, circle 14 on inquiry card

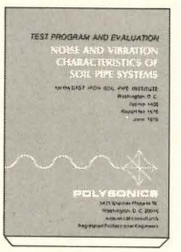
To plan this successful office building the first thing they did was to hire an acoustical engineer.



Office Building: 500 12th Street, S.W., Washington, D.C. Builder-owner: Charles E. Smith Companies. Architects: Chatelain, Samperton & Nolan. Acoustical Consultants: Polysonics Acoustical Engineers.

The first thing he did was to specify a quiet plumbing system with Cast Iron Soil Pipe joined with neoprene gaskets.

Officials of the Charles C. Smith Companies, builder-owner of this modern office building in Washington, D.C., felt acoustical design and engineering were important. They employed an acoustical engineer to help guard against noise pollution that would reduce the building's efficiency and comfort for occupants. He wisely specified permanent Cast Iron Soil Pipe—"the quiet pipe"—joined with gaskets of Du Pont neoprene. A comprehensive two year research study proved Cast Iron Soil Pipe joined with Du Pont neoprene gaskets the quietest DWV system available.
Best of all—it's economical too!



FREE! Complete details of this study are compiled in this 30-page engineering report. Request it on your letterhead.

CAST IRON SOIL PIPE INSTITUTE
2029-K STREET, N.W.
WASHINGTON, D.C. 20006

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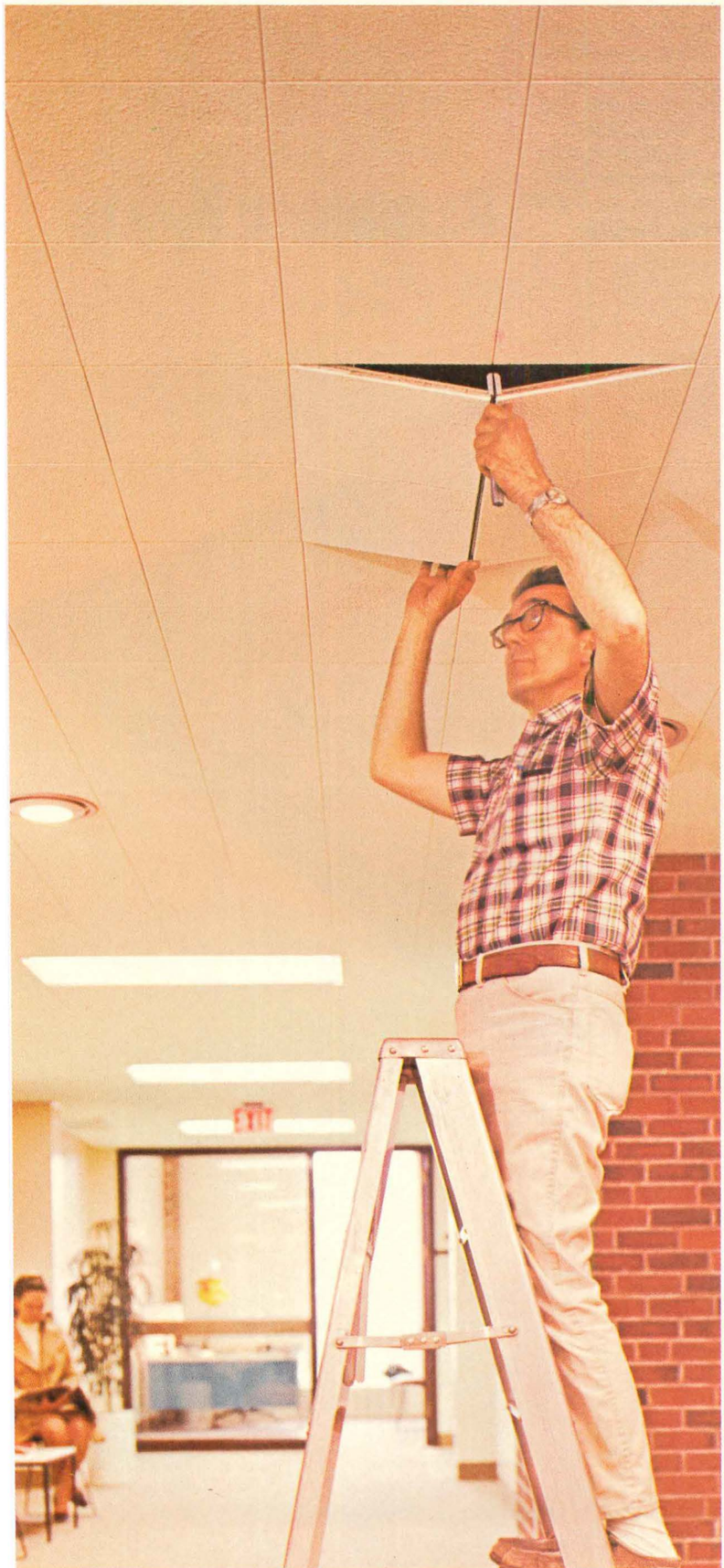
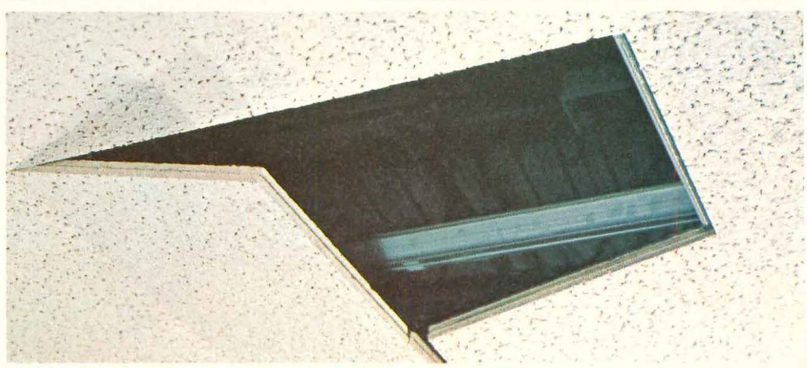
Most ceiling systems don't provide total accessibility.

Armstrong "ATS" does.





Armstrong Accessible Tile System (ATS) provides a ceiling in which every tile doubles as an access panel. Access to overhead services—at any point in the ceiling—is quick and easy. And ATS offers the flexibility of rearranging tiles and lighting fixtures to meet changing spatial needs. All that is needed are a ladder and a special hook knife.

In addition to its accessibility and flexibility, ATS offers rated fire protection, a large selection of surface designs, and effective noise reduction and sound-attenuation control.

ATS is being used to provide easy plenum access in modern buildings across the country. Other Armstrong Ceiling Systems are being used successfully to meet different requirements, solve different problems.

Write for our free booklet, "Armstrong Accessible Tile System". It tells the whole story. Armstrong, 4211 Rock Street, Lancaster, PA 17604.

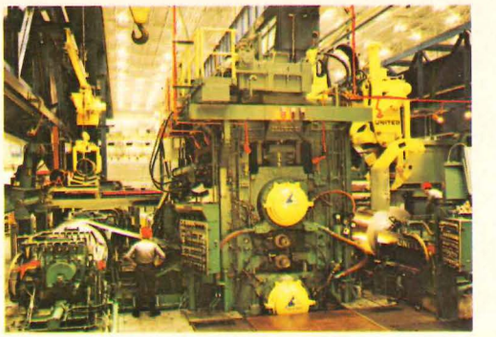
Armstrong CEILING SYSTEMS THAT WORK

For more data, circle 16 on inquiry card

COLOR DYNAMICS® makes the most of existing light in an industrial plant...

for greater productivity.

All too often, no more thought is given to painting the inside of a plant than to painting the inside of a cardboard box . . .



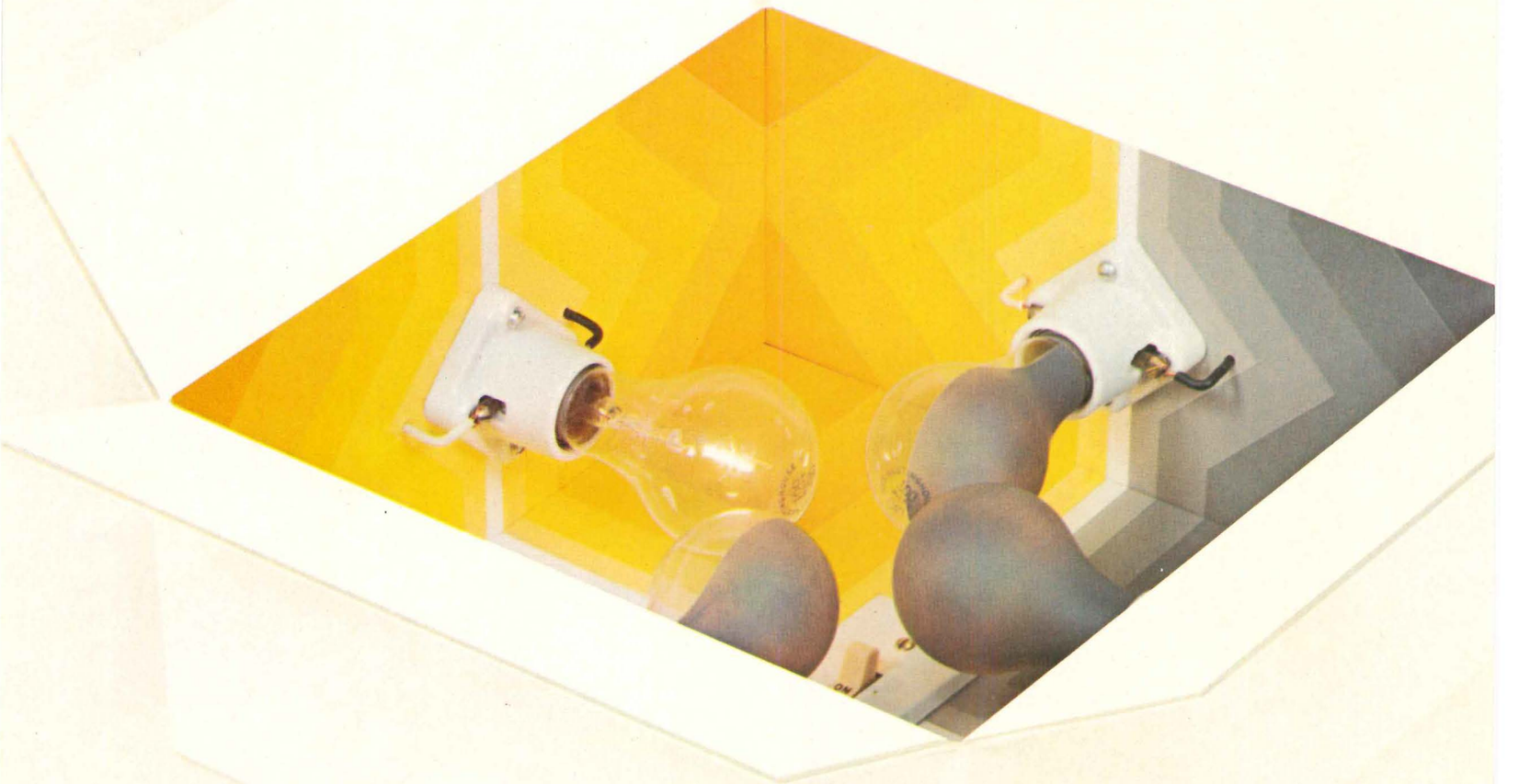
In a remodeling project, cost considerations may dictate the retention of existing lighting facilities. The *Color Dynamics* system provides the right colors to properly utilize the available light—which could result in improved production, both in quality and quantity. This is one of the advantages of the *Color Dynamics* system.

Yet, *Color Dynamics* does much more. It enables you, the architect, to select and specify a color system that could also result in fewer accidents, less absenteeism, greater efficiency and reduced eye fatigue. It's a valuable aid in servicing your clients.

When you specify *Pittsburgh Paints* for renovation, or new construction, you also provide economical, long-lasting paint protection. Write for free 16-page booklet on *Color Dynamics.* PPG Industries, One Gateway Center, 3W, Pittsburgh, Pa. 15222.

PPG: ***a Concern for the Future***

PITTSBURGH® PAINTS



COLOR DYNAMICS® the inside story

PPG INDUSTRIES

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Montgomery moves you to the top of Tishman Westwood

Ten Montgomery high speed passenger elevators move people at Los Angeles' Tishman Westwood Building. Five of the Montgomery elevators are 800 f.p.m. high rise units servicing floors 14 through 24. Five others are 500 f.p.m. to the 14th floor. All are directed by Montgomery ESP Measured Demand Group Supervisory Control. Montgomery PM Preventive Maintenance will keep the new Tishman elevators operating at peak performance.

Montgomery manufactures a complete range of elevators and escalators. Montgomery installation and maintenance specialists are located in more than 140 offices throughout North America. Call a nearby Montgomery Elevator Company office for complete information on Montgomery products and service, or write: Montgomery Elevator Company, 30 Twentieth St., Moline, Illinois 61265.

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Montgomery Elevator Company, Moline, Illinois 61265
Montgomery Elevator Co. Limited, Toronto, Ontario
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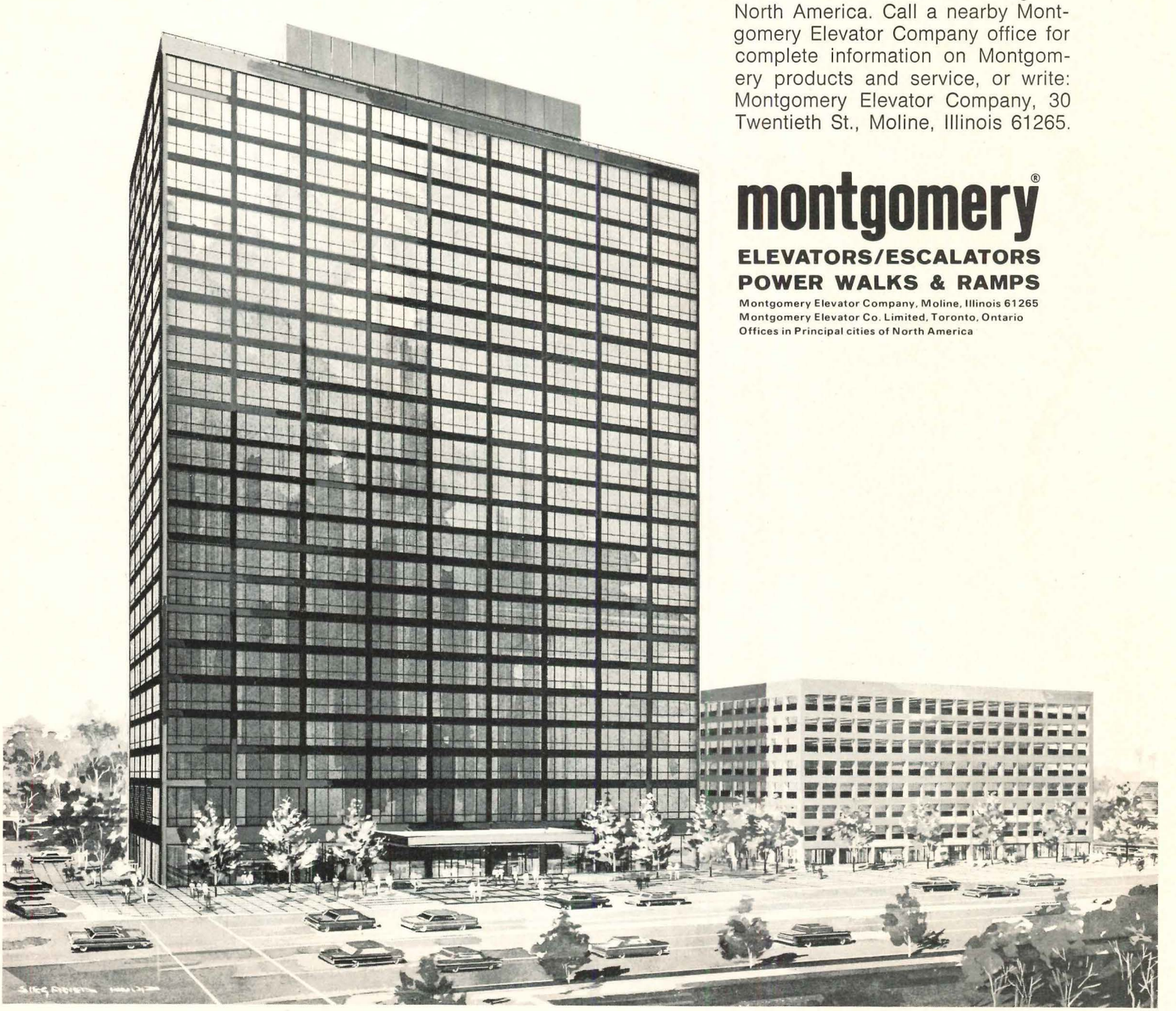


Owner: Tishman Westwood Corp

Architect: Welton Becket and Associates

For more data, circle 23 on inquiry card

News in brief

Five architects and an architecture student representative have been named to the 1972 AIA Honor Awards jury. Jury members, chosen by the board of directors, are: Henry N. Cobb, New York City, chairman; Antonin Aeck, Atlanta, Ga., student representative; Gerald L. Allison, FAIA, Honolulu; John G. Dinkeloo, Hamden, Conn.; Harry M. Weese, FAIA, Chicago; and Harry C. Wolf, Charlotte, N. C. Milton L. Grigg, FAIA, Charlottesville, Va., the 1971 jury chairman, will serve as adviser.

Building products manufacturers posted a solid gain in profits during the second quarter of 1971, it was announced recently by the F. W. Dodge Division of McGraw-Hill Information Systems Company. It was the first time since 1969 that Dodge's sample of building materials producers showed a year-to-year improvement in earnings. The remainder of 1971 is expected to show further profit improvement for this group of manufacturers.

The Second Architects-Engineers Conference on Federal Agency Construction Programs (St. Louis, Missouri, November 29-30) has announced the following subjects for its agenda: Grant-in-aid Programs; Minority Contracting and Affirmative Action Programs; New Contracting Procedures; Parks Development; Pollution Control, Post Office Construction; a major discussion of the Defense Department's Construction Program.

William L. Slayton, executive vice president of the American Institute of Architects, has been made an Honorary Member of the Institute. The designation was made September 23 by the AIA board of directors at its fall meeting in Minneapolis.

Nominations now are being received for the sixteenth annual R. S. Reynolds Memorial Award for distinguished architecture with significant use of aluminum. The winning architect (or firm) will receive $25,000—the largest cash award in architecture.

The National Institute for Architectural Education is sponsoring several new competitions. In addition to the traditional Lloyd Warren Fellowship, Paris Prize and the Hirons Scholarship, newly announced competitions include: 1) William Van Alen Memorial Prize ($6,000 for the design of prefabricated multi-family housing); The Cecylja B. Rother Award ($1,000 for the design of an urban subway station); and a Special Competition ($2,700 for the design of a plaza in an urban business district). Several other N.I.A.E. competitions, dropped in recent years, have been reinstated. For detailed information, interested students should contact: National Institute for Architectural Education, 10 West 40th Street, New York City, N.Y. 10018.

A Round Table on Energy Conservation—and Lower Operating Costs—Through Higher Quality Building was sponsored by ARCHITECTURAL RECORD in New York last month. Some of the country's leading architects, engineers, builders, lenders and government officials attended. For a preliminary report, see Editorial, page 9 of this issue. A complete report will appear in the January 1972 RECORD.

Louis Menk, FAIA has been honored with the Michigan Society of Architects' Gold Medal for 1971. Menk received the award "in recognition of his demonstrated leadership in the profession . . . and his contribution to the advancement of local, state and national architectural organizations and to his community."

William G. McMinn, AIA, has been appointed Head of the Department of Architectural at Louisiana State University. McMinn replaces O. J. Baker who returns to full-time teaching duties.

Four $3,000 graduate study fellowships will be awarded in 1972 by the American Institute of Steel Construction. The grants will be awarded to graduate, civil or achitectural engineering students pursuing advanced degrees in a graduate program related to fabricated structural steel. To be eligible for the fellowship awards, applicants must be currently enrolled as seniors in an undergraduate civil or architectural engineering program or be graduated with a degree in civil or architectural engineering, and planning a course of study at an accredited college or university. Applications for the fellowships are available at the college's civil or architectural engineering departments and from the AISC Committee on Education, 101 Park Avenue, New York, N.Y. 10017. February 10, 1972 is the deadline for receiving applications addressed to the Committee on Education in New York. The names of the four winners will be announced on March 1, 1972.

Corinthian capital and rondelle salvaged from turn-of-the century New York buildings.

Ornaments from New York's lost buildings

An exhibition of fragments of late 19th century architectural decoration rescued from the rubble of the city's demolished landmarks went on view at Hofstra University, Hempstead, New York, during the month of October. Gargoyles, keystones, doorway lintels, pilasters, friezes, tympanum, iron medallions, iron beam ties and window ornaments were selected by Robert Littman, director of the Emily Lowe Gallery, to reveal the charm, originality and craftsmanship of the anonymous artisans who decorated New York's mansions, tenements, churches and public buildings at the turn of the century. The architectural fragments were mounted in a setting intended to dramatize the constant destruction of the city's historic buildings, with pieces exhibited on sawhorses, planks, scaffolding, pedestals and ladders, framed by discarded doors painted in garish pastels and adorned with scraps of old wallpaper.

GSA seeking more construction managers

The General Services Administration is embarked on its second large-scale experiment with construction management services. (Walter Kidde Construction Company was selected for the first project—RECORD, News Reports, October 1971.) The new work is a $72 million package of three projects—social security payment centers to be built in San Francisco, Chicago and Philadelphia. GSA has announced it will consider construction management firms on the basis of at least seven minimum requirements:

1. demonstrated experience and competence in performing all phases of construction management services;
2. financial ability to provide the services required by the GSA;
3. experience during the past three years as a constructon manager on at least one project with a construction cost in excess of $25 million;
4. competence in architectural, civil, mechanical, electrical and structural engineering; construction estimating; cost accounting and control; tenant coordination; project management; contract negotiation and administration; construction superintendance and inspection and other separate but closely related fields;
5. a history of constructed buildings in the general geographic areas involved in this project, or have good recent knowledge of local conditions in the project areas or can retain others with such knowledge;
6. ability to provide professionally qualified personnel to staff the project;
7. a good professional and business reputation, and an on-time performance record.

Selection will be made as this issue goes to press. All contracts will be awarded as soon as necessary funding is made available.

Patchwork Plaza

"Patchwork Plaza" is what they call it because it was constructed of 700, two-foot equilateral triangles individually designed and cast in concrete by teenage members of the N.Y.C. Community Arts Workshop. The 40-foot, circular plaza, soon to be completed, will occupy a site at the south end of Washington Square Park.

From the beginning, the project has been a kind of social mosaic—people of all ages, interests and ethnic backgrounds have contributed their design skills, their strong backs and their enthusiasm. The Community Arts Workshop, under the direction of Susan Shapiro, has created not only a handsome plaza but provided an effective and constructive vehicle for community action. "Patchwork Plaza" was funded by the New York State Council on the Arts and built with the cooperation of the City's Department of Parks and Cultural Affairs and Greenwich Village Planning Board Number Two.

Gene Coleman

Transplant

London Bridge, symbol of empire and the largest antique ever imported to this country from Europe, has been rebuilt in the Arizona desert at a cost of $7 million and will form the centerpiece of a complex of tourist-oriented shops and restaurants in Lake Havasu City, Arizona. The young city's developers, McCulloch Oil Corporation, anticipate that the famous old structure will help draw five million visitors a year to the site. The old site drew better.

New York Times

High noon for Chicago's Old Stock Exchange

What is almost certainly the final chapter in a year-long struggle to save Louis Sullivan's Chicago Stock Exchange is now being played out. Even as wreckers are beginning their work on the upper floors, the Landmark Preservation Council of Chicago announced it was attempting to raise $200,000 as a down payment to save the 77-year-old structure. All previous efforts to save the building have ended in failure and spokesmen for the Landmarks Preservation Council conceded that current last-minute efforts at preservation had only the slimmest chances of success. Some small consolation came when Mayor Richard Daley's office announced that the historic building's main entrance arch, column capitals and parts of its cornice might be saved and turned over to several Chicago museums.

NASA initiates earth resources studies

The National Aeronautics and Space Administration has announced that, during the next several years, scientists from many nations will have an opportunity to analyze earth resources data gathered from two orbiting spacecraft. The spacecraft are the Earth Resources Technology Satellite (ERTS) to be launched in the spring of 1972 and the Earth Resources Experiment Package (EREP) planned for a year later.

Both ERTS and EREP spacecraft will obtain high-resolution, multispectral images of the earth's surface and distribute these images to scientific users in a wide variety of disciplines. Typical subjects of upcoming studies in the United States:

- storm and tidal erosion of the barrier islands off the Gulf Coast of Texas
- inventory of timber resources in all U.S. forests
- the effect of domestic livestock grazing on public lands in the western United States
- the formation and charting of icebergs in the Antarctic
- replanting of land devastated by strip mining in Ohio

Overseas, the first studies will include:

- detection of locust breeding sites in Saudi Arabia
- urban and regional planning in Venezuela
- snow surveys to assess the risk of spring flooding in Norway

Processed data on terrain features will be stored in retrievable form at the Department of the Interior's Data Center in Sioux Falls, South Dakota. Oceanographic and meteorological data will be stored at the National Environmental Satellite Service at Suitland, Maryland.

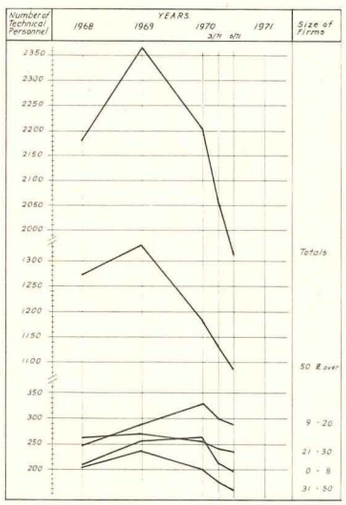
How useful this new data gathering tool will be is as yet unknown, but the potential seems enormous. Architects, engineers, city and regional planners—all those directly concerned with man's environment, should be among the first to benefit.

Expo site changed again

Philadelphians, anticipating their roles as hosts for Expo '76, learned recently that the 1,000-acre Byberry site in northeast Philadelphia has been abandoned by the Expo Corporation. Planners are now studying a site that embraces both banks of the Delaware River and Petty's Island in midstream.

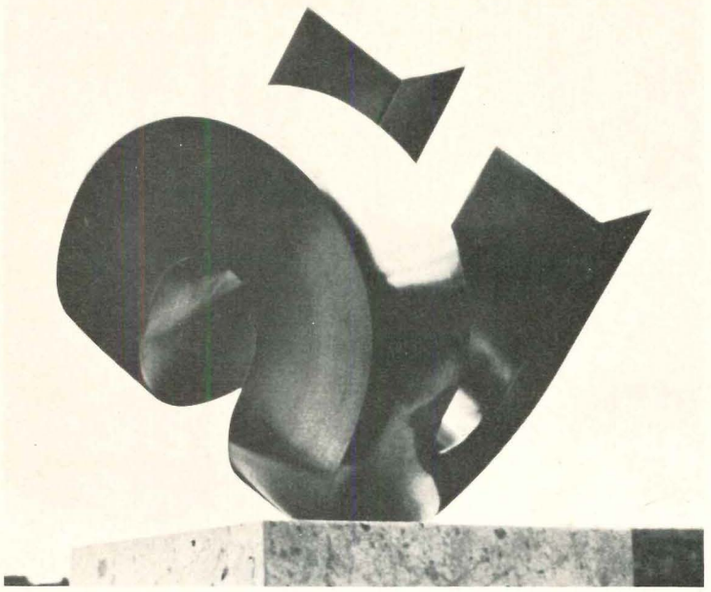
If the new site is adopted, Pennsylvania will be "host" in name only as most of the site's land area is in southern New Jersey. The shift is considered a coup for New Jersey Governor Cahill who recently lured the New York football Giants to a new home in the fens of north Jersey.

The eleventh-hour abandonment of the Byberry site has put enormous pressure on the Expo Corporation who must appear with firm plans before the Bureau of International Expositions in Paris late in November. To assist in a crash feasibility study, Arthur D. Little, Inc. of Cambridge, Massachusetts has been retained as consultants. Not the least of planners' concerns is how the dilapidated, crowded sections of downtown Philadelphia and Camden can possibly accommodate Expo's 50 million visitors in the summer of 1976 alone.



Survey of New York office activity

A survey of 101 New York firms taken recently by the Office Practice Committee of NY/AIA revealed that work (measured in numbers of technical personnel employed) showed a general decline of 17 per cent through the first nine months of this year. The most severe decline (approximately 5 per cent) occurred between March 31st and June 30th, 1971. The lower bars (see chart) reflect the trend by office size. Of the 101 offices surveyed, 23 expect an increase during the next six months, 22 anticipate a further decrease, two are undecided, and 53 expect volume to remain about the same.



Outdoor sculptures for New York City

The Association for a Better New York, Inc. (ABNY), composed of a hundred prominent businessmen, will give the City a Christmas present in the form of six large-scale sculptures to be placed at temporary outdoor sites around the city. The sculptures, which range in height up to about 12 feet and are executed in painted steel, were purchased from Sculpture Editions, Limited.

"We are presenting the City with these sculptures to give our public thoroughfares the grace and charm of European promenades" explained Charles B. Berenson representing ABNY.

Accepting in behalf of the City, August Hechscher, Parks and Cultural Affairs Commissioner, indicated the sculptures would be shifted annually to new sites within the five boroughs.

The artists are: Antoni Milkowski, Robert Engman, Lyman Kipp, Roger Bolomey, William Crovello and Buky Schwartz.

Insurers shifting thrust of urban aid program

"We have shifted our emphasis from housing loans to loans for inner-city commercial, industrial and medical facilities," said Roger Wilkens, chairman of the insurance industry's Joint Committee on Urban Problems. This new thrust may have important consequences as the industry's commitment is large ($2 billion) and numerous housing projects, seeking this funding, are now in planning. Wilkens said his committee was seeking a better balance between housing investment and loans that create job opportunities in inner-city areas.

Other spokesmen for the insurance industry have voiced the opinion that "Fanny May" and its sister organization "Ginny May" are now capable of handling much of the future investment in urban housing. As this shift develops, large projects like Ujima Village in Los Angeles and UPACA in New York City appear to be among the last to rely heavily on funding from the life insurance companies.

New Stoller exhibit

A new exhibition of architectural photographs by Ezra Stoller will start touring colleges and universities this fall. The exhibit includes twelve, 40-inch square panels that offer a particularly detailed and comprehensive study of the Boots Pure Drug Company Headquarters in Nottingham, England (RECORD, April 1969). "Rarely," says Stoller, "has an attempt been made to present a single work of architecture in as many carefully related photographs."

Venturi and Rauch projects shown in New York

An exhibition of the work of Venturi and Rauch was recently held at the Whitney Museum of Art in New York, and most of the architectural world in that city was there at the opening. For a firm that has generated ideas that very few other architects like, architects certainly turned out en masse to see and be seen. Perhaps they were there to see if a bandwagon was about to leave without them. The exhibition is mounted on two translucent plastic panels that have been formed to look like a highway billboard (of course) pointing in two directions. The graphics are black-line drawings or color photographs mounted on plastic, with lighting behind, so that each picture or line stands out in bright relief. Regardless of your opinion of the content, the design of the presentation system is precise and appropriate. The exhibition ran at the Whitney through October 31, and included most of the office's work from 1961 through today.

New ACI Code to be broadcast over closed-circuit T.V.

It won't be Muhammed Ali or Joe Frazier, but the technique will be the same when the 1971 ACI Code is presented January 18 over closed-circuit television in 20 American cities. The American Concrete Institute and the Portland Cement Association, co-sponsors, have arranged a six-hour broadcast that will cover all provisions of the new code that has been three years in preparation. Cities scheduled to receive the telecast are Baltimore, Boston, New York, Rochester, Washington, D.C., Philadelphia and Pittsburgh in the East; Chicago, Cleveland, Detroit, Kansas City, Minneapolis and St. Louis in the Midwest; New Orleans in the South; Dallas and Houston in the Southwest; Los Angeles and San Francisco in the Far West.

Interested professionals who wish to see the telecast should register with the Portland Cement Association, Old Orchard Road, in Skokie, Illinois not later than December 15, 1971.

Pardon Us

In its August 1971 editorial, RECORD incorrectly stated that the AIA Convention adopted Resolution 5—a resolution committing the AIA "to the promotion and support of programs which encourage the voluntary control of population growth and the ultimate stabilization of the world's population." The resolution was *not* passed. RECORD regrets its error and thanks those many readers who wrote to call this mistake to our attention.

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Permalite Pk provides greater insulation with less thickness. It is made for installations requiring "U" values of .05 or higher where limited insurance requirements are stated for steel deck application and where roof edge curb or fascia require lesser thickness of insulation, yet high efficiency.

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The union of Permalite Sealskin with urethane provides the dimensional stability that has given Permalite Sealskin rigid roof insulation nationwide building code acceptance as well as FM and UL approvals.*

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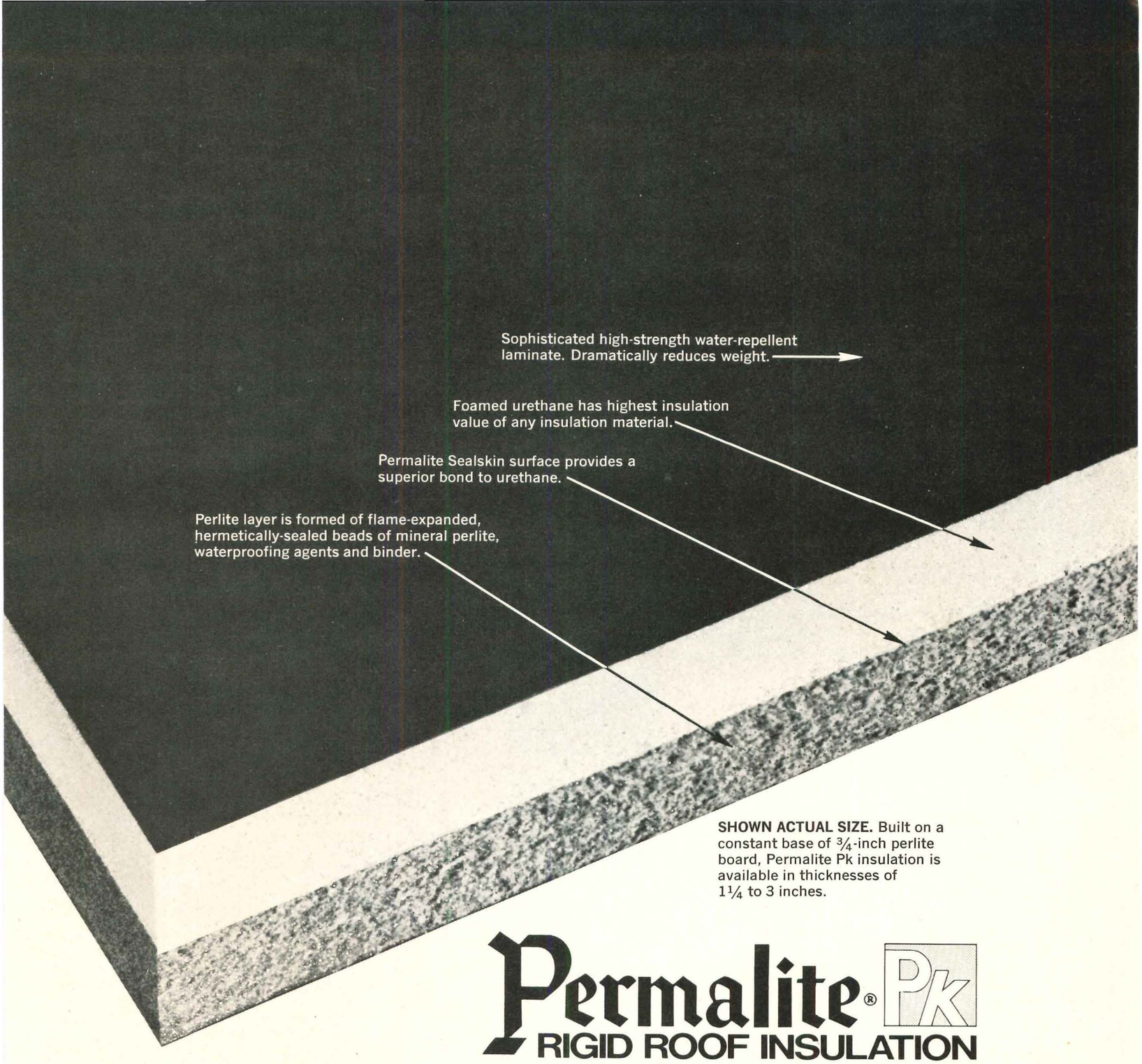

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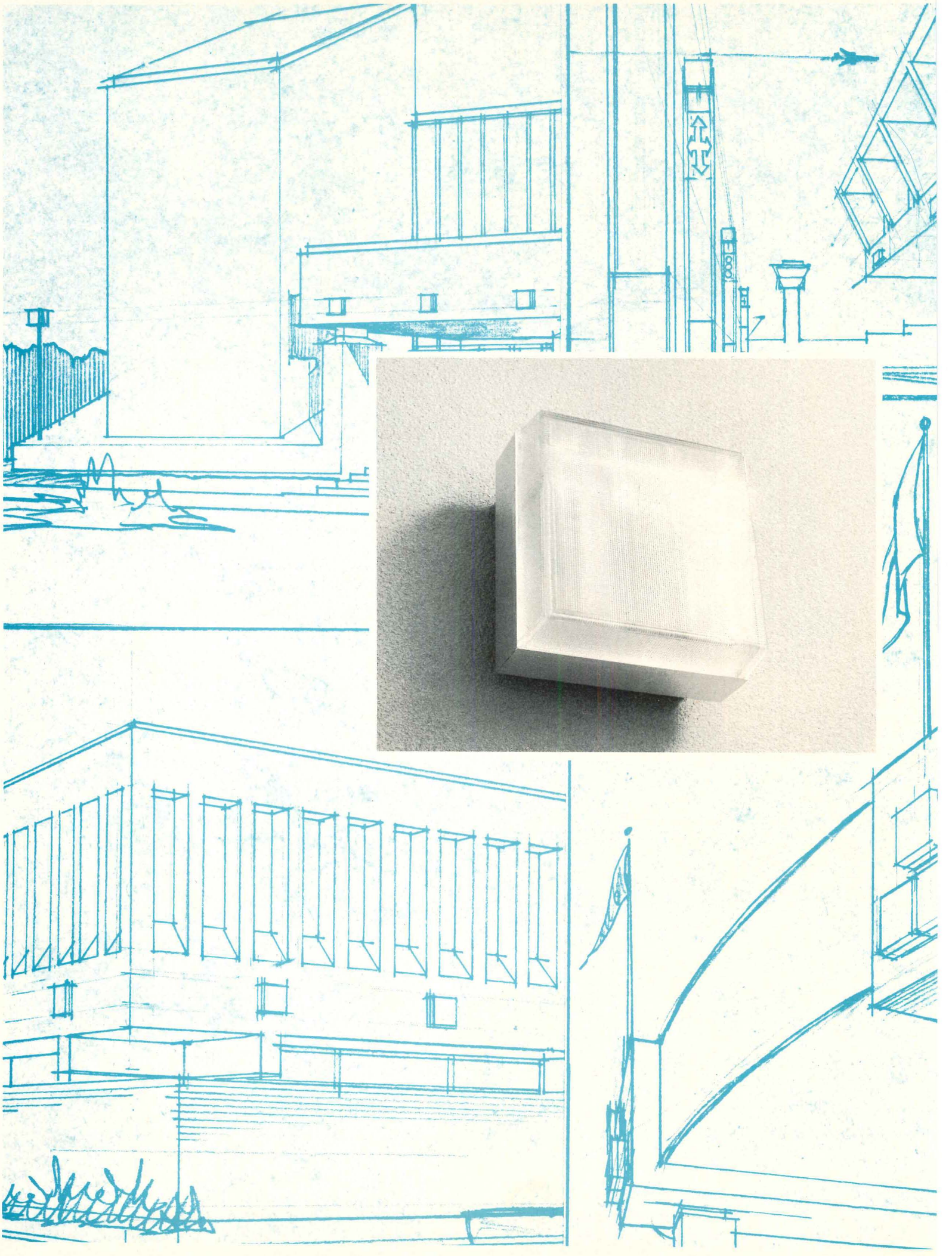
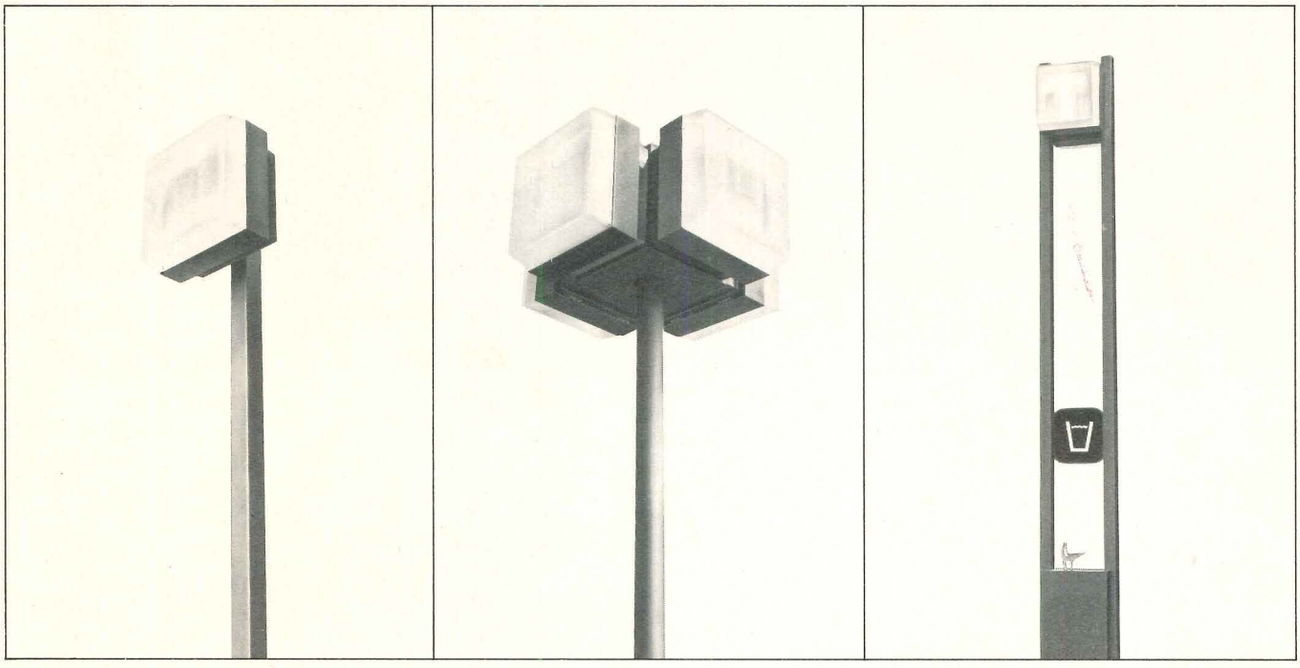


The 'Module 600'™ concept: building blocks of light.



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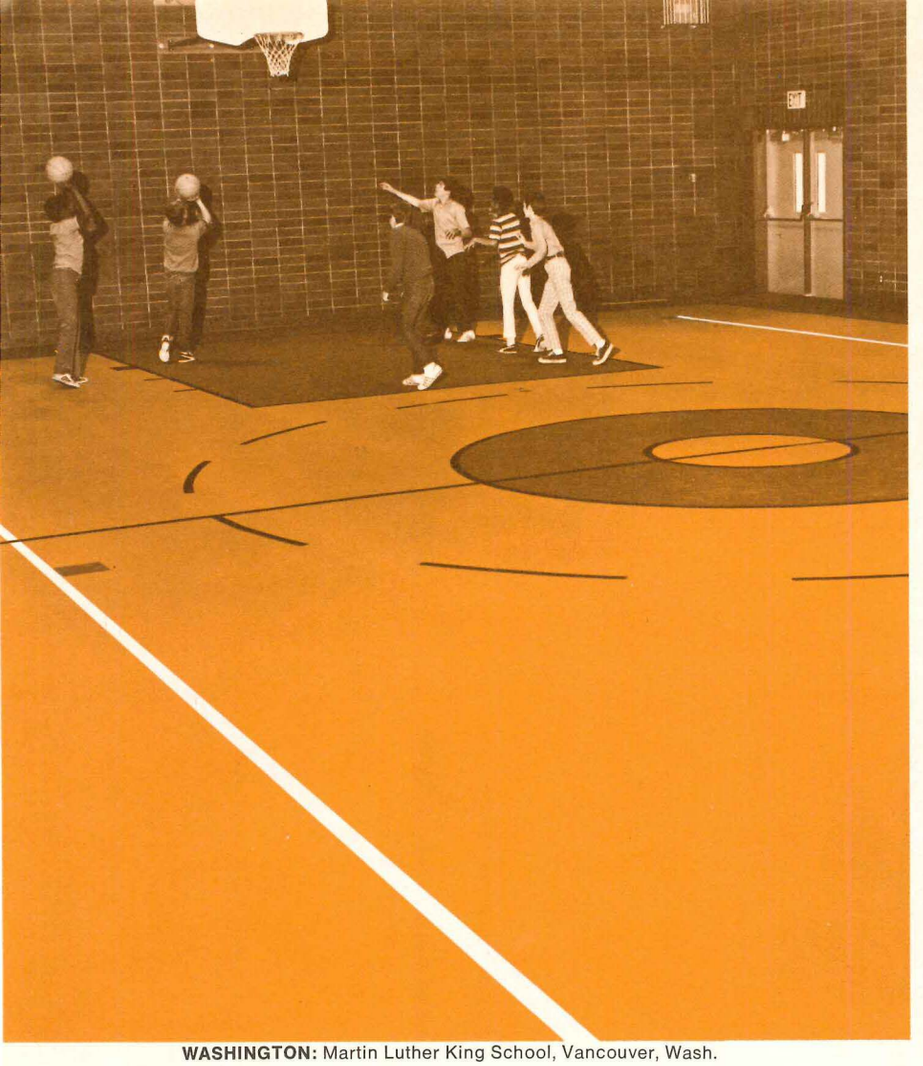
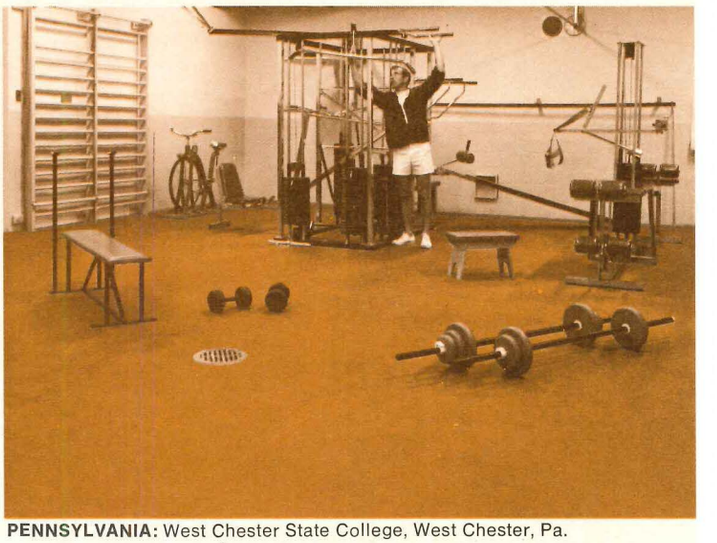


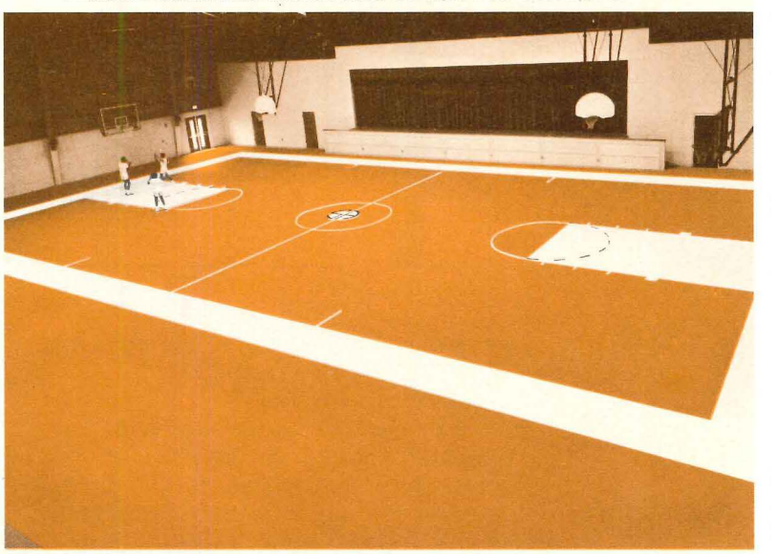
WASHINGTON: Martin Luther King School, Vancouver, Wash.

MISSISSIPPI: U.S. Naval Battalion Center, Gulfport, Miss.



PENNSYLVANIA: West Chester State College, West Chester, Pa.

Robbins SPORT-TRED® is popular coast to coast



GEORGIA: Southland Academy, Americus, Ga.

Solid vinyl SPORT-TRED is winning nationwide acclaim as the best synthetic surface. Installed and in use from Maine to California and from Florida to Washington state, it has reaped praise from architects, coaches and school officials for its appearance, playability and durability. SPORT-TRED is the indoor/outdoor surface that can be customized for color. It is considered superior to laminated vinyls and filled urethanes, since it won't fade, change color, shrink, absorb stains or show undue wear patterns under normal use. Court markings are applied with specially compounded paints that stay on without scuffing or smearing.

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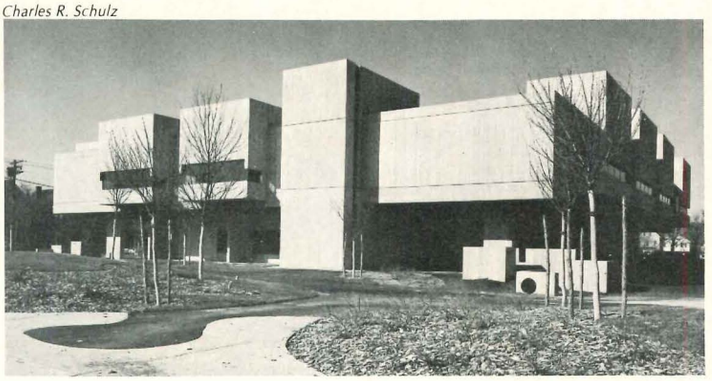
Fourth biennial HUD awards for design excellence

All entries for this competition were HUD-assisted projects completed since January 1965. The jury consisted of: Gunnar Birkerts, Myles Boylan, Donald Hardison, Jeh Vincent Johnson, Edward D. Stone, Jr., Paul Weidlinger and Ralph Warburton. Their over-all critique of the submissions was that the level of design had risen but that most projects would benefit from more explicit consideration of areas beyond the property line and from more detailed site planning. They felt few high-rise projects dealt effectively with the site. Three Special Mentions were given and awards went to six Urban Design Concepts and 21 Project Designs.

Yerba Buena Center Central Blocks in San Francisco designed by Kenzo Tange and Urtec received an Honor Award. It is a 25-acre commercial, convention, sports and cultural nucleus of an 87-acre redevelopment area. Major features are canted garages entered by four ramp towers and a three-block-long moving sidewalk and pedestrian way.

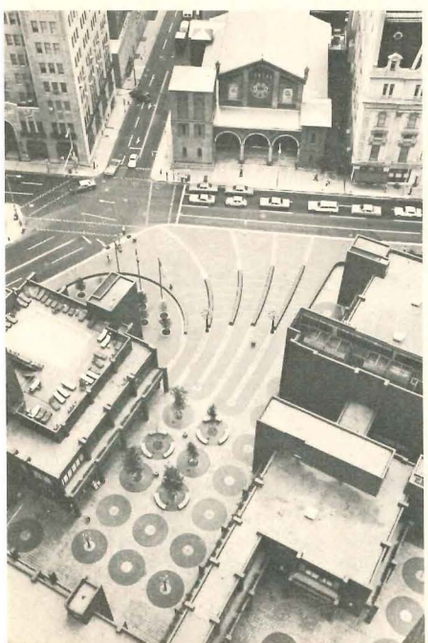
Charles R. Schulz



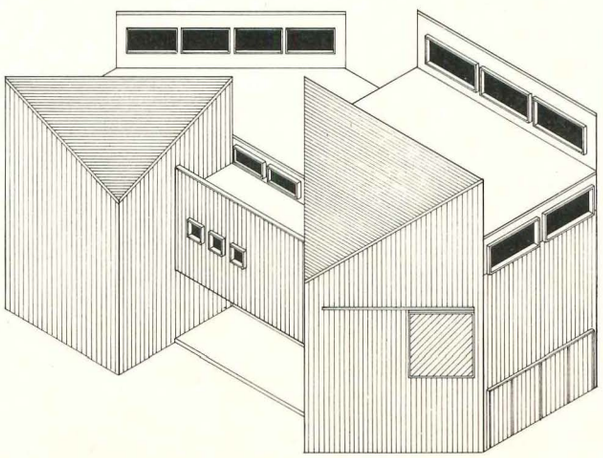
Christopher Columbus School in New Haven by Davis, Cochran, Miller, Baerman, Noyes is commended for an efficient plan and bold handling of concrete. Each classroom has skylights and varied windows.

Art Hupy

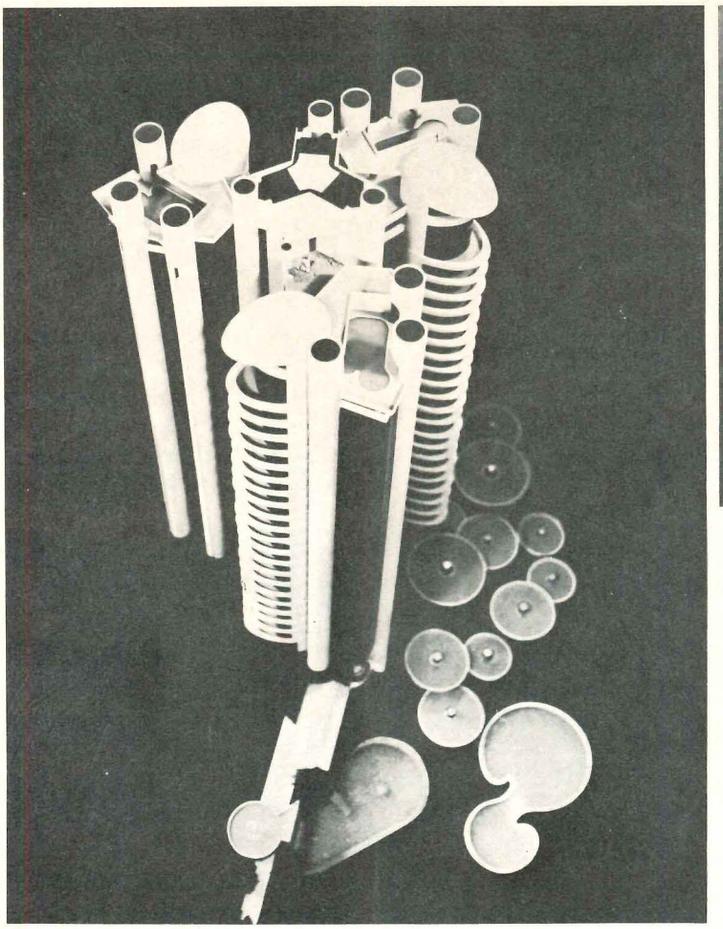
Medgar Evers Memorial Pool in Seattle by John M. Morse is well related in scale to its neighborhood. Its roof forms a recreational deck and the skylights minimize glare spots on the water surface.

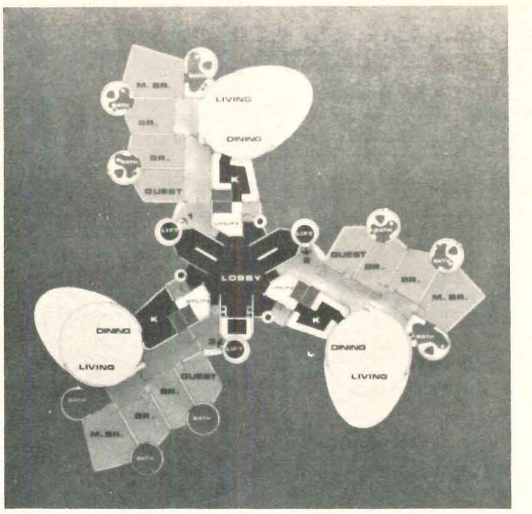


Two Charles Center, Baltimore, consists of two apartment towers with low retail-office buildings around a plaza and underground parking. The jury especially commended the plaza's relationships to the adjacent urban fabric. Plaza architects-planners: RTKL, Inc.; towers architects: Conklin & Rossant; landscape architect: George Patton.

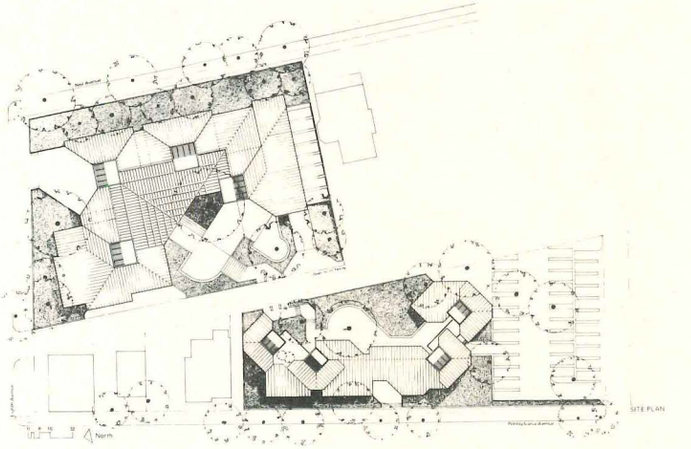


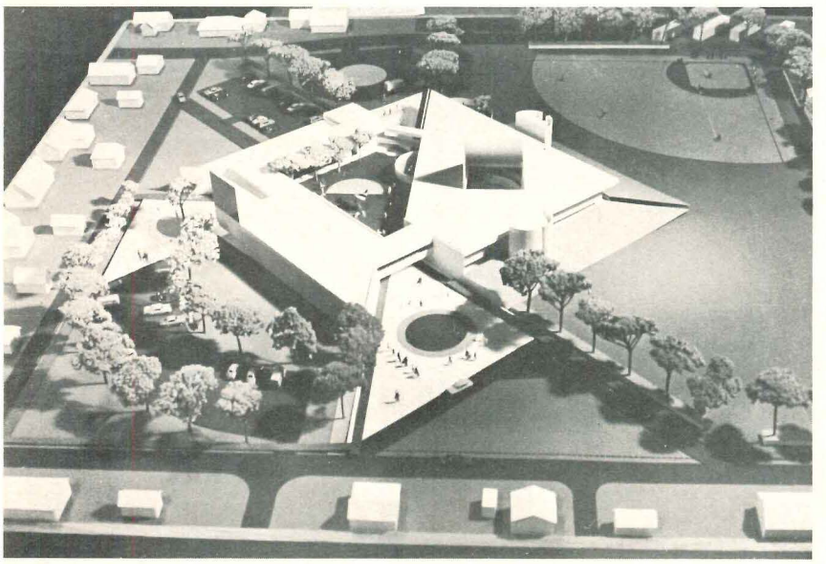
Lower Grassy-Trace Branch Community Center, Kentucky, became a design problem for Yale's first year class. The design voted best by jury and class was built. Economical spatially and in terms of upkeep, it has a shop, kitchen, clinic, classroom, commons room. Designers: Robert Nicholais, David Shepler, Mark Ellis, Robert Hammel.



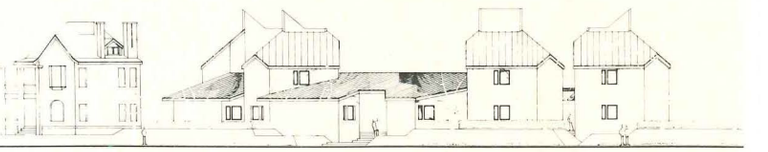


Futura is a 25-story luxury apartment building, designed by Seow Lee Heah & Partners, under construction in Singapore. Three apartments per floor (top right) extending out from a Y-shaped service core will have maximum views and privacy—including private landscaped elevator lobbies. The structure is supported by the circular service elements—elevators, baths, refuse chutes—of slip-formed reinforced concrete. The curtain wall is bronze anodized aluminum and tinted glass butting the concrete directly. Grounds will have pool.

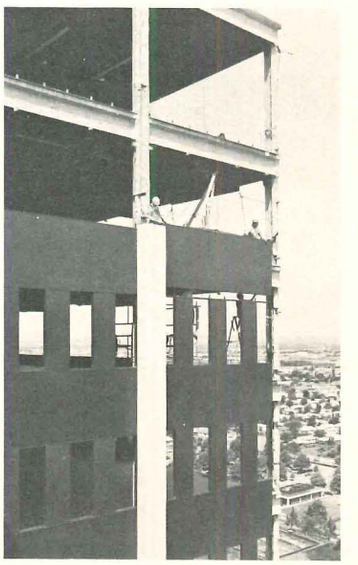




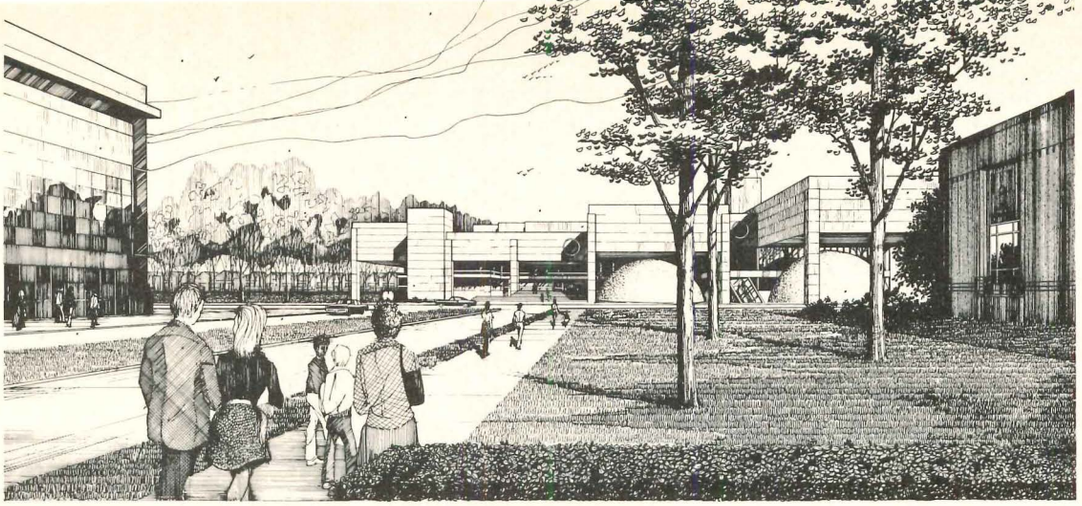
Columbus, Indiana community school by Caudill Rowlett Scott was designed with advice from the children—fourth-to sixth-graders from a poverty area — who requested spiral slides, ramps, tunnels, color TV, robot teachers, climbing ropes, firemen's poles, automatic supermarket-style doors, waterbeds, sprinklers, places to play outside even when it's raining, and a place to bring pets to school. They did get spiral slides so they can zip even into the library, two tunnels, and a building with an open, welcoming plan so they can feel it is theirs to come to day or night and to show off. The school will also be used as a community center for adult education and Head Start programs.

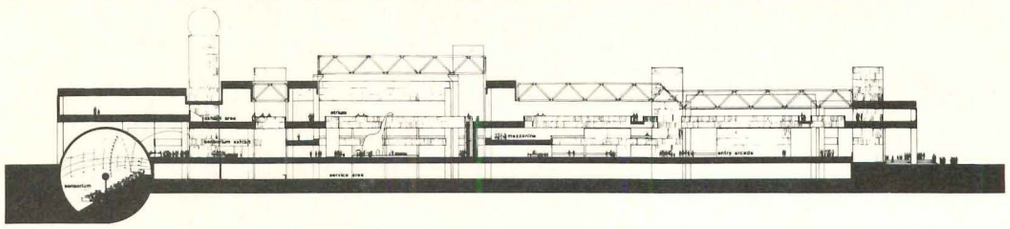


The Academy for Contemporary Problems, co-sponsored by Battelle Memorial Institute and Ohio State University, Columbus, is being designed by Naramore, Bain, Brady and Johanson of Seattle, winners of a Class A competition. The two buildings, one (top in plan) for research offices, administration and conferences, the other (elevation) for lodging visitors, share a court and have stairs rather than halls.

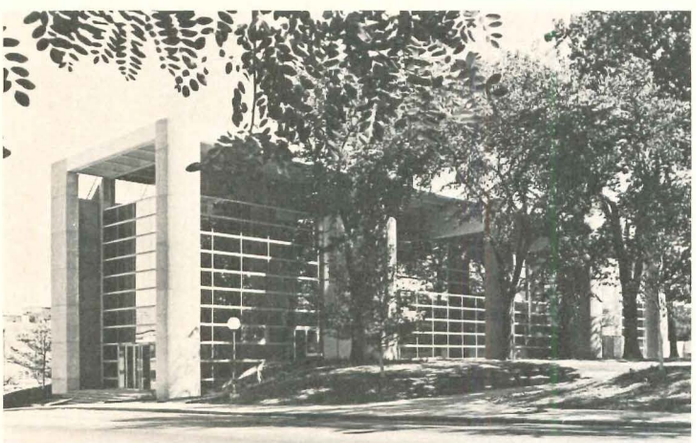


Martin Tower, Bethlehem Steel Corporation's new office tower in Bethlehem, has a unique curtain wall of panels fabricated from 3/16-in.-thick steel plate. Pointed tabs projecting upward from the top of a panel are received by openings in the bottom of the panel above. The panels are locked in place and then they are welded at the sides to the building's columns and to angles along the beams.

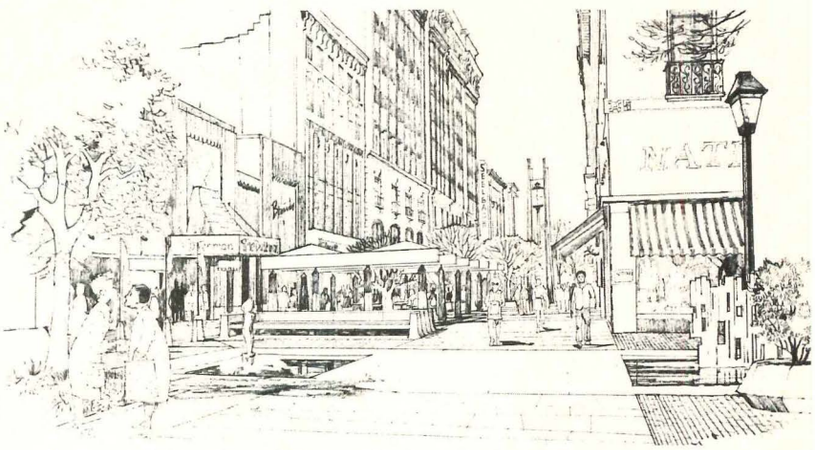




The Detroit Science Center by William Kessler and Associates will provide experiences and exhibits of science. The sensorium—a spherical theater—will be a planetarium and enable visitors to simulate space-craft maneuvers. The main floor, conceived as an extension of the urban fabric, will be open for free circulation through exhibits and access to animal care facilities, shops, meeting spaces and a restaurant. Administration will be on the mezzanine. The top exhibit floor will minimize museum fatigue by varying temperature, color, texture, volume and outside views. Mechanical services will exhibit their scientific principles and an eco-mechanical system will be developed to demonstrate solutions to environmental problems. The backstage, exhibit-producing areas will be visible to the public.

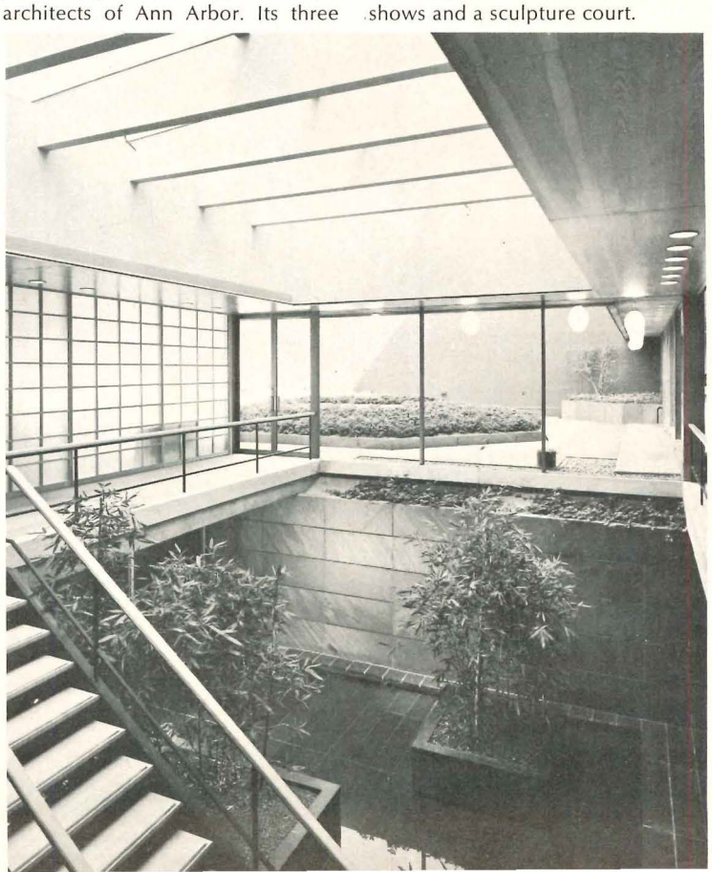


Power Center for the Performing Arts by Kevin Roche John Dinkeloo and Associates provides the University of Michigan with a $3.5-million, 1,420-seat theater in a structure of reflective glass and steel reinforced concrete. The stage is convertible from proscenium to thrust by moving a lift for the orchestra platform which can stop at four levels. Jo Mielziner was the lighting and stage co-designer.

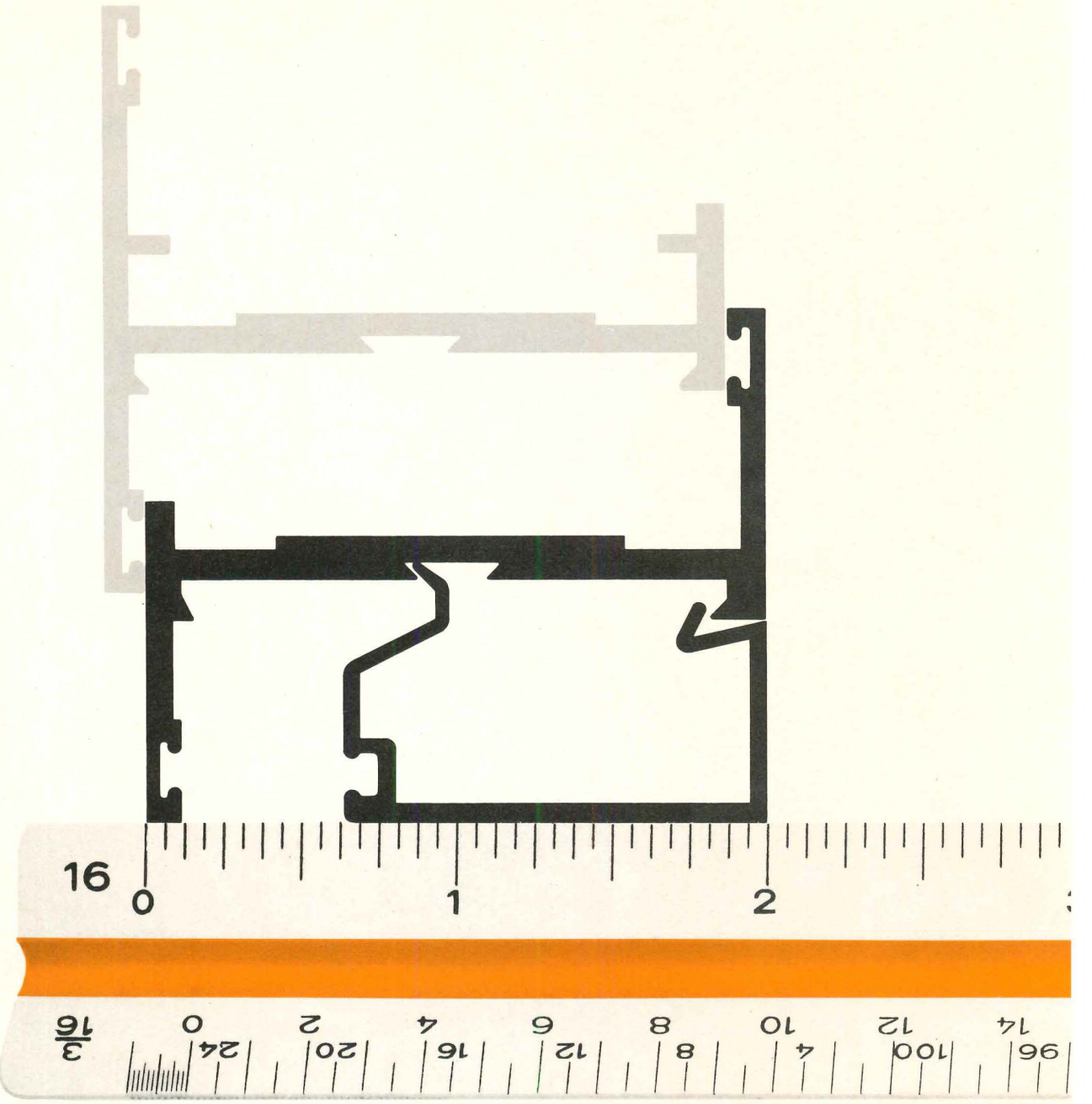


Fourth Street Pedestrian Mall, a vital part of Louisville's center city redevelopment, is by Ryan Associated Architects of Louisville, and Johnson, Johnson, Roy, landscape architects of Ann Arbor. Its three blocks, paved with brick and textured concrete and closed to traffic, will have trees, fountains, small garden-sitting areas, playgrounds, a display court for art and flower shows and a sculpture court.

Joseph W. Molitor



Japan House, a new cultural center and headquarters for the Japan Society in New York was designed by Junzo Yoshimura of Tokyo and Gruzen and Partners of New York. The public areas—lobby, library, meeting rooms and exhibit space—open either onto the central pool planted with bamboo on the main floor, the second-story roof garden which simulates a mountain, or a gravel covered, skylighted sculpture court which adapts the tokonoma convention of having a ceiling which is invisible from the rest of the room. The basement stage is appropriate for Noh drama. Slats of aromatic Japanese cypress in the reception area coffers will give an aura of Japan.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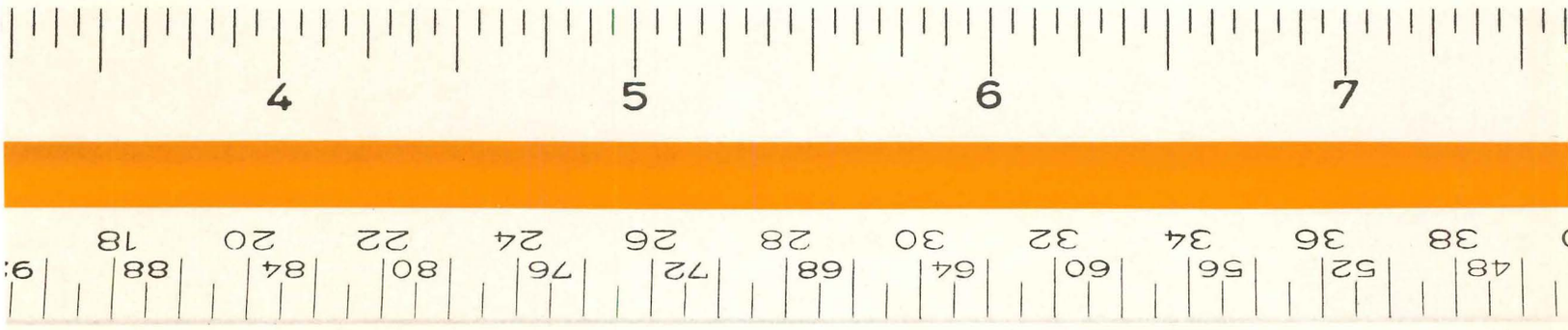

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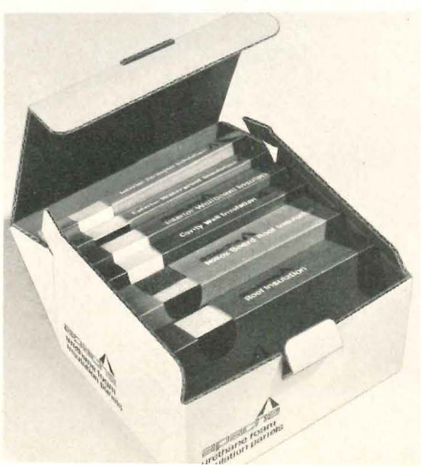

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A Division of Millmaster Onyx Corporation

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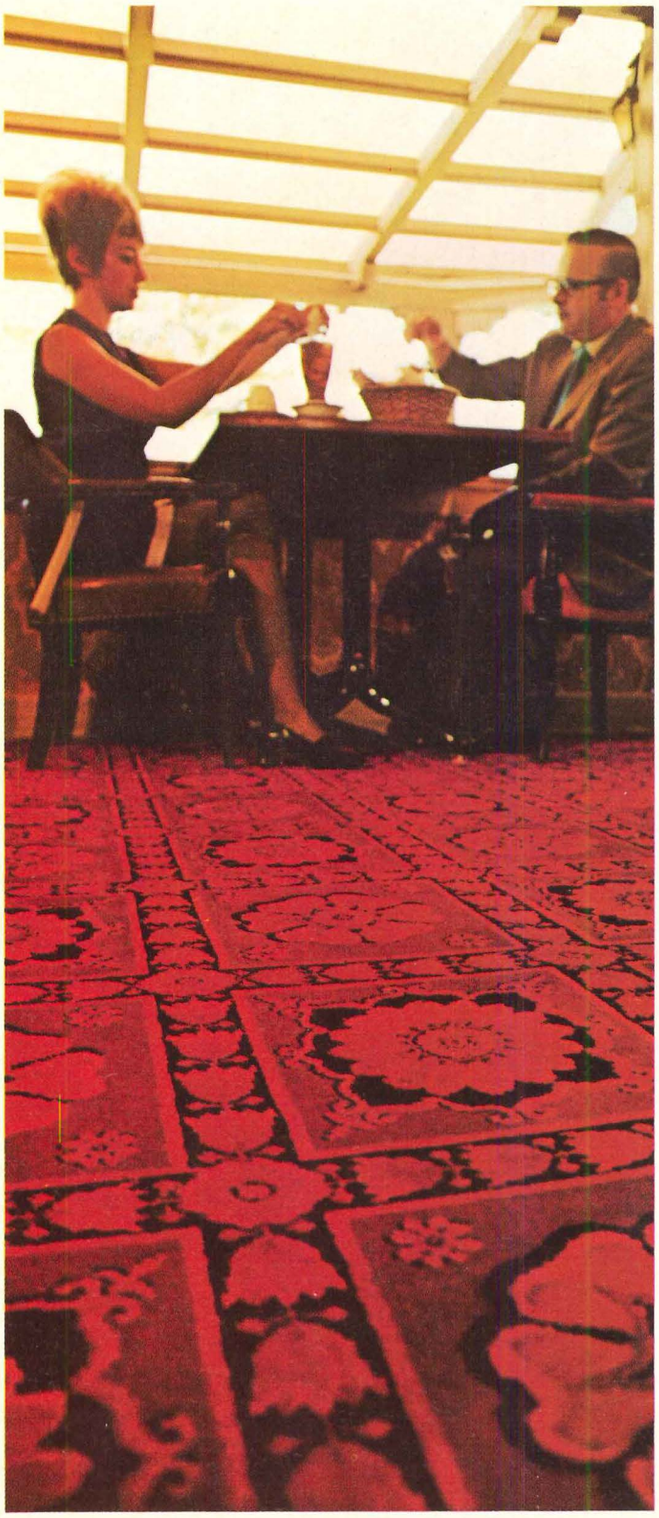
The Executive Inn, Louisville, Ky., picked carpet of Antron® for more than its luxurious appearance.



They chose carpet with pile of Antron* nylon because its outstanding ability to hide spots and soil keeps it looking luxurious. Through rain and mud, heavy baggage carts and spilled food and drinks, this carpet of "Antron" stays looking like new.

Guests notice only the rich, handsome surroundings. "Antron" hides soil between cleanings, and dirt and the occasional spots which do show can be easily removed. With proper care, carpet of "Antron" can cut maintenance costs up to 50% over hard-surface floors.

Because it's nylon, "Antron" is also tough, durable and crush resistant. It resists abrasion and furniture marks, controls noise, and creates a warm, relaxed atmosphere.

First installed in the Tudor Room Restaurant four years ago, carpet of "Antron" was so successful the Executive Inn put it down in the main lobby, corridors, stairways, and elevators.

If both appearance and performance are vital to your next carpeting job, call on carpet of "Antron".

For more information, contact your mill or write to Contract Carpet Specialist, Du Pont, Room 303, Centre Road Bldg., Wilmington, Del. 19898.

*Du Pont registered trademark. Du Pont makes fibers, not carpets.

DU PONT
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WHEN CARPET DOES IT, CARPET OF SOIL-HIDING ANTRON® DOES IT BEST.

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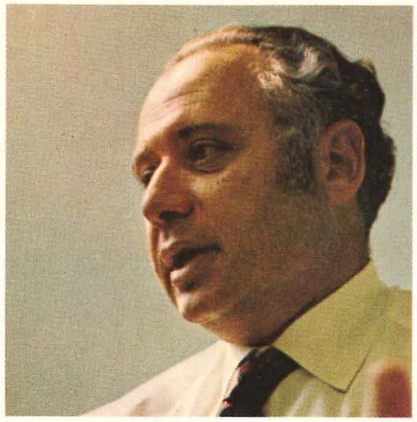

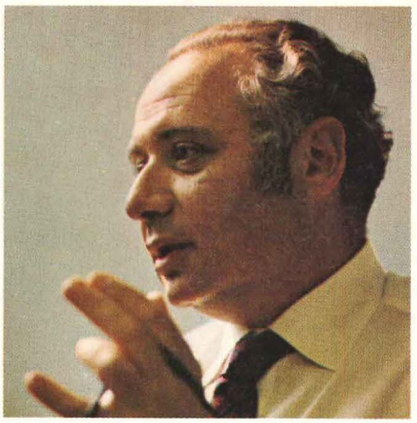

Mal Levy (World Trade Center, Chief of Planning and Construction, The Port of New York Authority) discusses the new role of the building owner:

"The conventional notion of a building owner is that of a man who outlines the building requirement, sets a budget, chooses an architect and then retires discreetly to the background until the building is completed.
It doesn't work that way. At least, it didn't on the World Trade Center project.
"From the very beginning, the Planning and Construction Division of The Port of New York Authority operated as an unconventional owner. Our first departure from the usual pattern was our choice of an architect. We were determined to find a man who shared our vision of the World Trade Center —someone who wanted to create great architecture, above and beyond the basic functional requirements of the building.
"After preliminary contacts with some of the outstanding architects in the profession, we decided to retain Minoru Yamasaki and Emery Roth and Sons, associate architects.
"Next, we brought together and worked closely with a building team *early in the process.* The general contractor, for example, was consulting with us during the design stage. Subcontractors, such as the curtain wall people, were making contributions six years ago.
"In addition, we insisted on performance specifications, instead of the usual descriptive ones. We felt that since the World Trade Center was a precedent-breaking structure, it called for its own performance criteria.
"This was advantageous for two reasons: first, because performance specs set common goals for the entire building team . . . and second, because they stimulated concepts tailored to the special needs of the World Trade Center, instead of warmed-over ideas from previous building experience.
"If our involvement with the Trade Center has taught us anything, it is this: The building owner's professional manager must function as an active member of the entire building team."

The World Trade Center is a project of The Port of New York Authority. Engineering and development were carried out under the Authority's World Trade Center Planning and Construction Division. The curtain wall fabricator was Cupples Products Division, H. H. Robertson Company.

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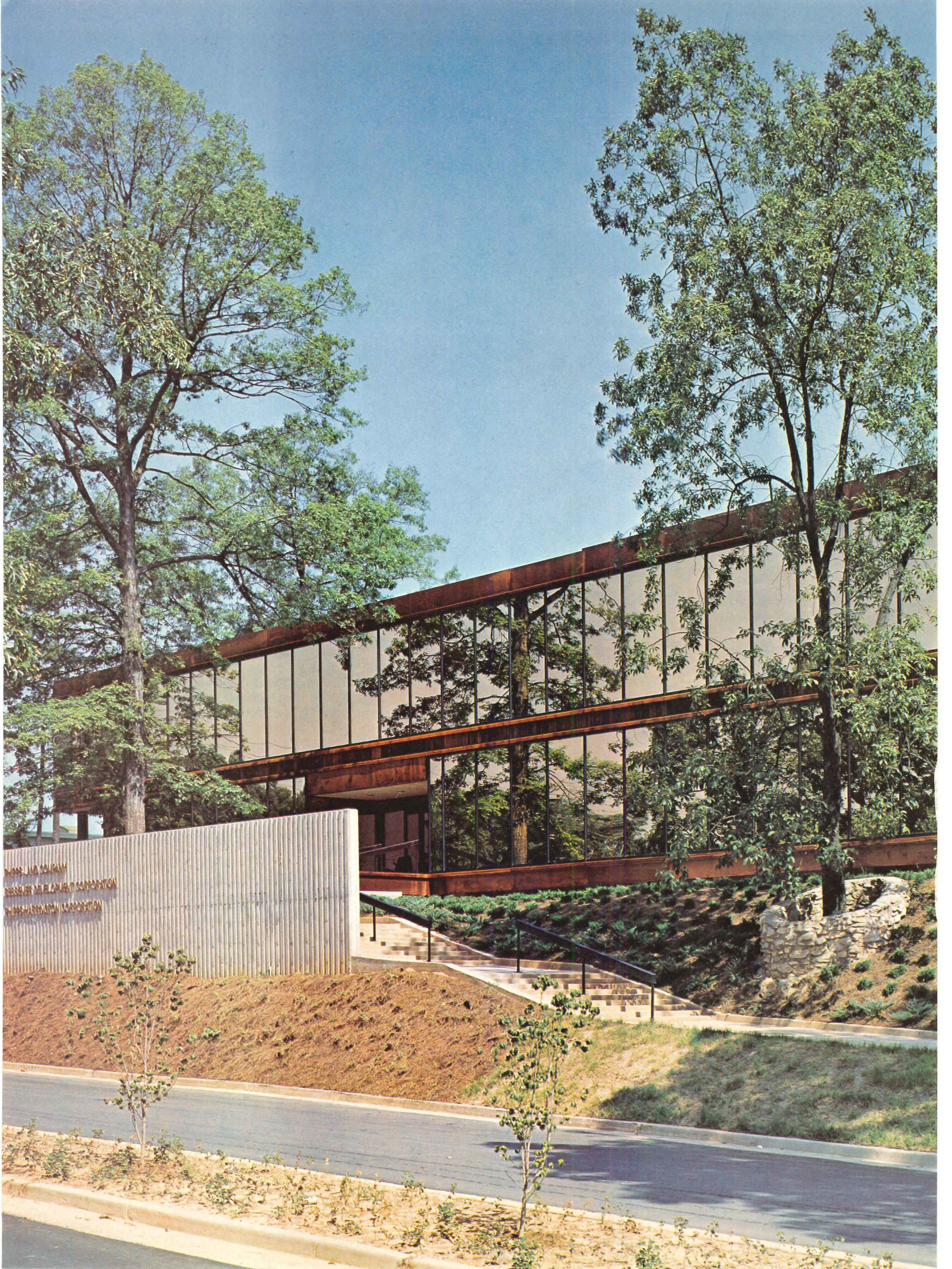
ALCOA



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See our Catalog in Sweet's 8.26/Ce when you want to refresh your memory and consider patterns, colors or specifications.

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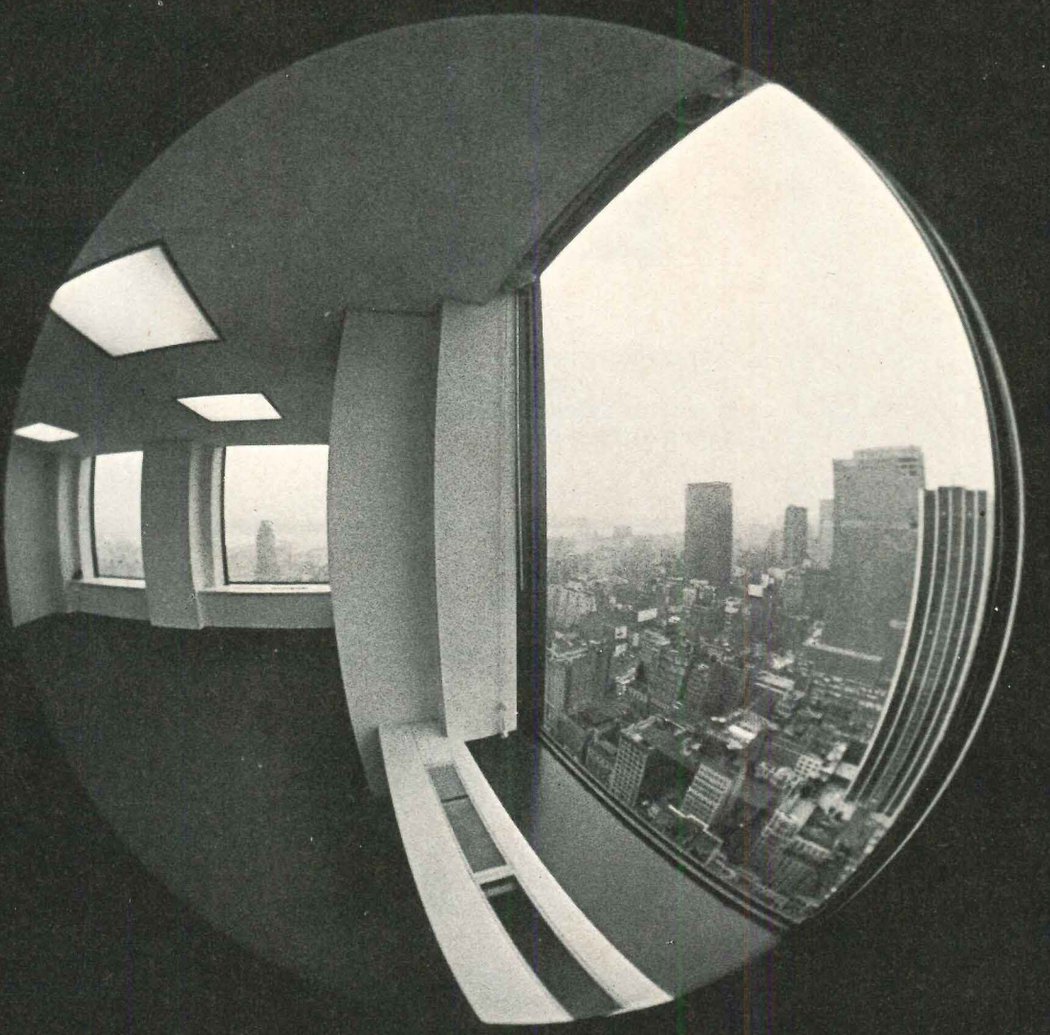
Owner: Phipps Land Co.
Architect: Toombs, Amisano & Wells
Stopray #2016 glazed by PPG, Atlanta

Design Tex lets you explore inner space. With Verel®



Because Design Tex offers very unusual drapery fabrics. That do all the practical things. Control light. Resist fire. Keep their color and shape. Clean easily. Because they're made with Verel modacrylic. And Design Tex offers you a staff of "personal assistants." The kind of people who can help you—to do the unique, the unheard-of-before. And they're in Atlanta, Houston, Chicago, New York and on the West Coast. So they're never too far away when you need them. Your kind of people? Contact us at

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213 274-6661.

Eastman Fibers Kodak

EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, 1133 AVENUE OF THE AMERICAS, NEW YORK, N.Y. 10036. Verel is the trademark for Eastman modacrylic fiber.

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Handed down from father to son, to son, to...

Generation after generation, Republic Steel lockers take the years in stride. Beautifully. Operating dependably. Retaining their good looks almost indefinitely.

Made from heavy-gage steel, Republic lockers have kick-proof handles and slam-proof hinges. Non-staining rubber silencers riveted to the frame hooks assure quiet openings and closings.

They come in double or single lockers, with standard or full louvers. Choose from two-person, box-type, and many other styles. In 19 smart decorator colors.

Want to start a tradition? Specify Republic Steel lockers. Write for brochure L-102 for more information. Republic Steel Corporation, Manufacturing Division, 1315 Albert Street, Youngstown, Ohio 44505.

Republicsteel
Manufacturing Division

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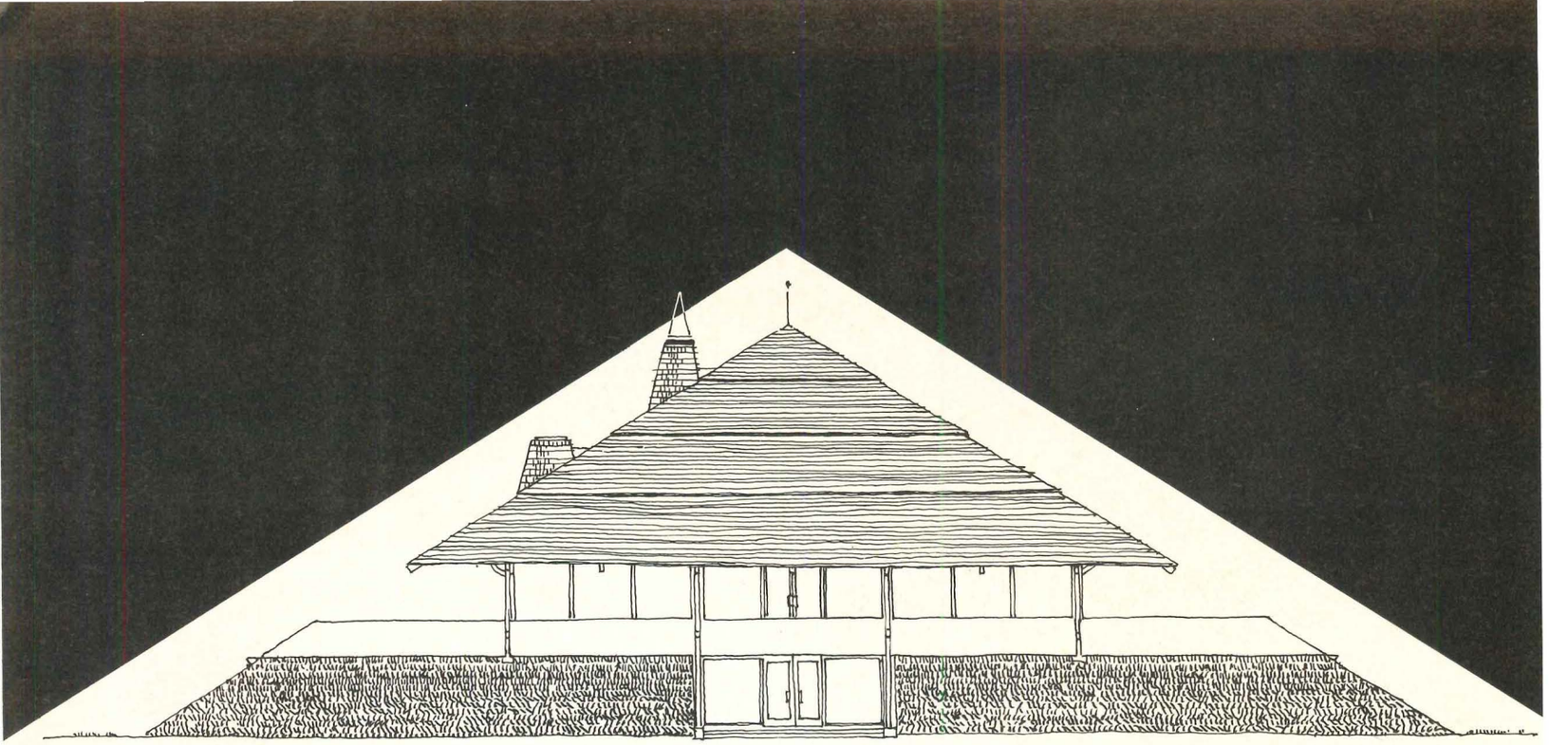
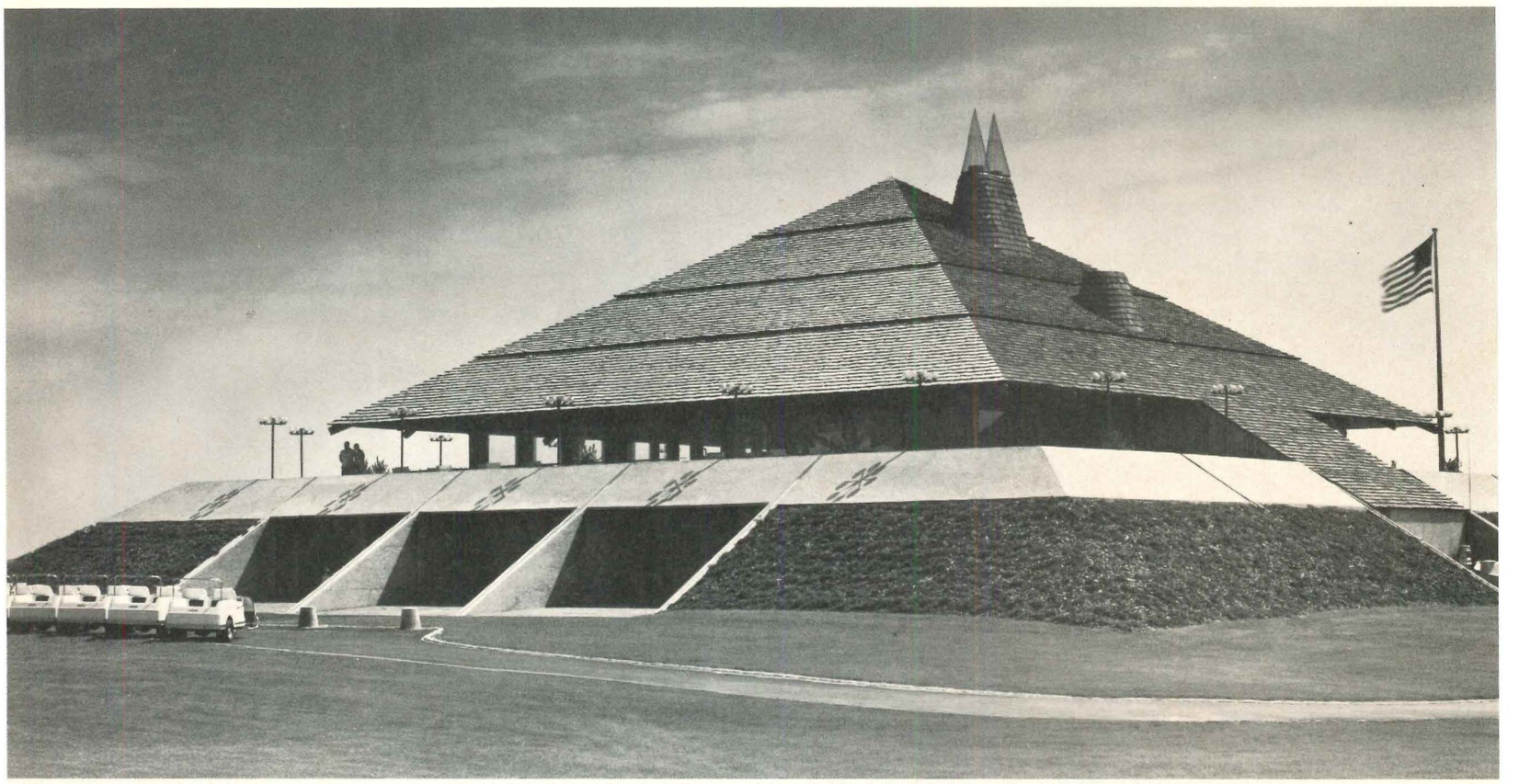


Red cedar shakes form a pyramid of texture.



Montauk Golf and Racquet Club, Long Island, New York. Certi-Split No. 1 Handsplit Shakes, 24" x ¾" to 1½". Architect: Richard Foster.

Sitting astride a dune-like hill, this Long Island country club is both landmark and landscape. A pyramid of beauty, it dominates the horizon. Amidst pyramids of sand, it mingles effortlessly in a coastal environment.

The building has character. Rich texture. Strength. All due in large part to the striking roof of red cedar handsplit shakes.

Red cedar is inviting; every shake is like a welcome mat.

And cedar is tough. Even in harsh marine weather it lasts for decades without maintenance. It resists mildew and decay, withstands hurricane winds, and is naturally insulative.

Put the versatility and enduring beauty of red cedar to work for you. Specify Certigrade shingles or Certi-Split handsplit shakes. For details and money-saving application tips, write: 5510 White Building, Seattle, Washington 98101. (In Canada: Suite 1500, 1055 West Hastings Street, Vancouver 1, B.C.)

THE CROWNING TOUCH OF QUALITY · RED CEDAR SHINGLES & HANDSPLIT SHAKES ·

Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

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There's only one fence that gives you quality and features like these.

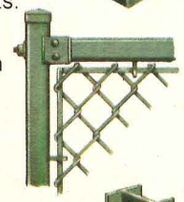
Only Anchor® Fence gives you Anchor quality—plus all these famous Anchor features.

Take Anchor Permafused® vinyl-coated chain link fence, shown above. Many coated chain link fabrics are made with extruded vinyl. It's like slipping wire into a soda straw. Not Anchor.

The tough plastic coating on Anchor Permafused is permanently *fused* to heavy steel wire in a special Anchor process. There's no room for moisture to form and corrosion to start between the wire and the coating. It's virtually unaffected by extremes of weather or corrosive atmospheres.

The vinyl-coated square corner posts, gate posts, and end posts are an Anchor exclusive. They're stronger than round posts of the same size, present a better appearance, and eliminate the need for ladder-forming bands used with round posts.

Another Anchor exclusive is the vinyl-coated gate. It opens a full 180° with a latch that works easily and efficiently yet can be locked quickly and positively. The rugged square-member construction provides rigidity and freedom from sagging, as well as a more handsome appearance.



Anchor vinyl-coated H-beam line posts are self-draining. Unlike pipe posts, condensed moisture drains away to stop interior corrosion before it starts.

And only Anchor gives you such a wide selection of fences. Permafused is available with or without barbed wire, with or without top rail. (The model illustrated above provides an extra measure of security because there is no top rail to be used as a climbing handhold.) Other Anchor Fences include galvanized steel chain link, aluminum chain link, Anchorweave, all-aluminum Privacy Fence, and many others.

Now then. If those aren't reasons enough to buy Anchor Fence, they should at least be enough for you to call your local Anchor man. He can tell you more.

(If you don't do *anything* else, send the coupon for a FREE color booklet full of exciting fence ideas.)

ANCHOR FENCE

BEST SELECTION BEST PROTECTION

Send for FREE 16-page color booklet containing fence specifications and money-saving fence suggestions.

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Anchor Fence, a division of Anchor Post Products, Inc.
Plants in Baltimore, Houston, Los Angeles; 48 branch offices

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For the past 17 years, LP® polysulfide polymer and the Lever House have been through a lot together.

720.29 inches of rain.
508.30 inches of snow.
7 air pollution warnings.
And a trillion jarring vibrations.

But through it all, the two have stuck together. The result: everything's warmer in the winter, cooler in the summer, and drier all year long at 425 Park Avenue, New York.

That's because LP polysulfide polymer has sealed this skyscraper tighter than a drum.

In spite of the chemical pollutants in the city air. The savage storms. The baking sun. And the eternal rumbles of the BMT Subway.

Because of its consistent performance over long periods of time, a sealant based on LP polysulfide polymer is a sealant you can depend on.

To prove the point, The Grenadier Corporation recently removed a sample of the sealant at the Lever House. And the results were excellent.

It still had excellent elasticity. For instance, it could be twisted 180 degrees around a ½" spike without snapping.

If you want this kind of long life protection, always insist on sealants bearing Thiokol's Seal of Security. It's your assurance of product performance. Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.

Thiokol

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Plexiglas® Keeps the Sun in its place!

To have the sun's light and warmth on your terms, you need control. The best control is easy with transparent gray and bronze Plexiglas acrylic plastic—the "Solar Control Series".

There are five densities of both transparent gray and bronze Plexiglas to provide a scale of visible light and solar heat transmittance values. This range of transmittance values permits you to select the density of Plexiglas which most effectively satisfies the interrelated requirements for adequate illumination and control of glare and solar heat gain.

Besides effectively controlling the sun, Plexiglas offers light weight; high breakage resistance; economical formability; and freedom from thermal shock cracking. Plexiglas is a slow burning plastic that is widely approved under local building codes.

You can use the Plexiglas acrylic sheet "Solar Control Series" for window glazing, flat or formed sunscreens, and formed skylights and dome enclosures.

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Rohm and Haas Co.
Independence Mall West
Philadelphia, Pa. 19105. Att: R. Rorke, AR-71

Check Information desired:

- ☐ Solar Control with Plexiglas
- ☐ Sunscreen Design Data
- ☐ Standard Residential Skylights
- ☐ Window Glazing with Plexiglas

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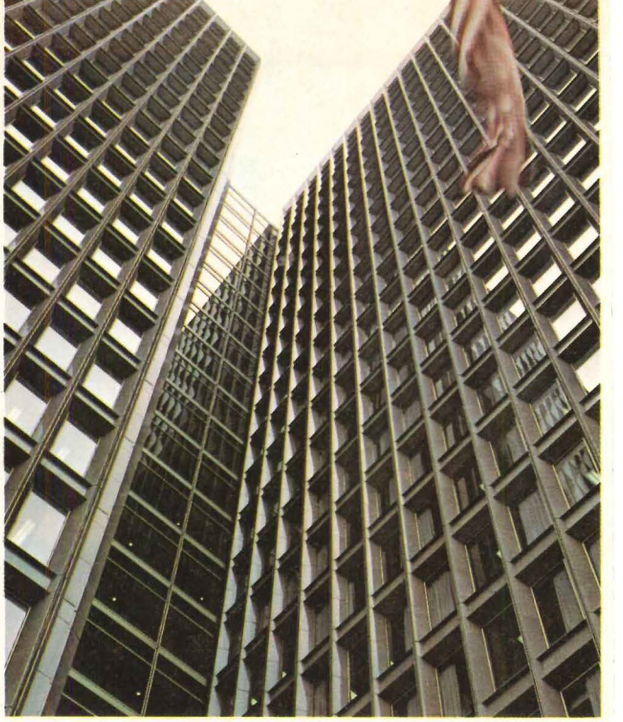
PLEXIGLAS is a trademark Reg. U.S. Pat. Off.

For more data, circle 42 on inquiry card

If granite is so hard to install, why didn't someone tell First Federal Savings and Loan, Detroit?



Sure. They'd heard the myth about granite posing costly installation problems. But they also knew you can't plan buildings on myths, so they went over the facts about Cold Spring granite with their architect. And they liked what they found: the natural beauty of Cold Spring's polished granite resists weather, stains and all types of traffic as no other building material can; it won't fade or deteriorate; it requires virtually no maintenance; it comes in a wide spectrum of colors; *and . . . it's economical to install, thanks to Cold Spring's development of new fabrication techniques that include improvements like steel-backed granite panels.*

In fact, they liked the idea well enough to use granite inside as well. In heavy traffic, high wear areas like check writing tables, teller's counters, and the wall facing that encloses the elevators.

How expensive is granite? Talk to our Customer Service Department about that. Tell them what you want to do and they'll tell you how it can be done. Step by step. And likely as not you'll find that granite fits your plans well on a cost-in-place basis. Refer to Sweet's Catalog No. 4.1/Co. Or call us.

Granite
can color
your thinking.

First Federal Savings & Loan,
Main Office, Detroit, Michigan
Architect:
Smith, Hinchman and Grylls
Contractor:
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Granite:
Dark Pearl

COLD SPRING GRANITE COMPANY / COLD SPRING, MINN.

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U.S.MAIL

Introducing flame resistant carpet of NOMEX®.

Two reasons for carpet of NOMEX high-temperature-resistant nylon: fire and smoke. NOMEX* fiber is permanently flame-resistant. Properly constructed carpet of NOMEX is rated Class A under the NFPA's Life Safety Code and exceeds all known and currently proposed flammability requirements. Carpet construction combining NOMEX fiber with fire-resistant backings provides maximum protection against flame spread and smoke.

NOMEX has the lowest smoke generation of any carpet fiber on the market. And that protection is permanent. Both the flame and smoke resistance of NOMEX are inherent in the fiber. They'll last the life of the carpet.

And that'll be a long life, because NOMEX is nylon-tough and long-wearing. It's highly resistant to stains and soiling—yet easy to clean. For more information, write: Du Pont Company, Room CRB 3156, Wilmington, Delaware 19898.

*Du Pont registered trademark.

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Keeps the outside out. Makes the inside in.
Glaverbel makes the city a great place to live.

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Glaverbel

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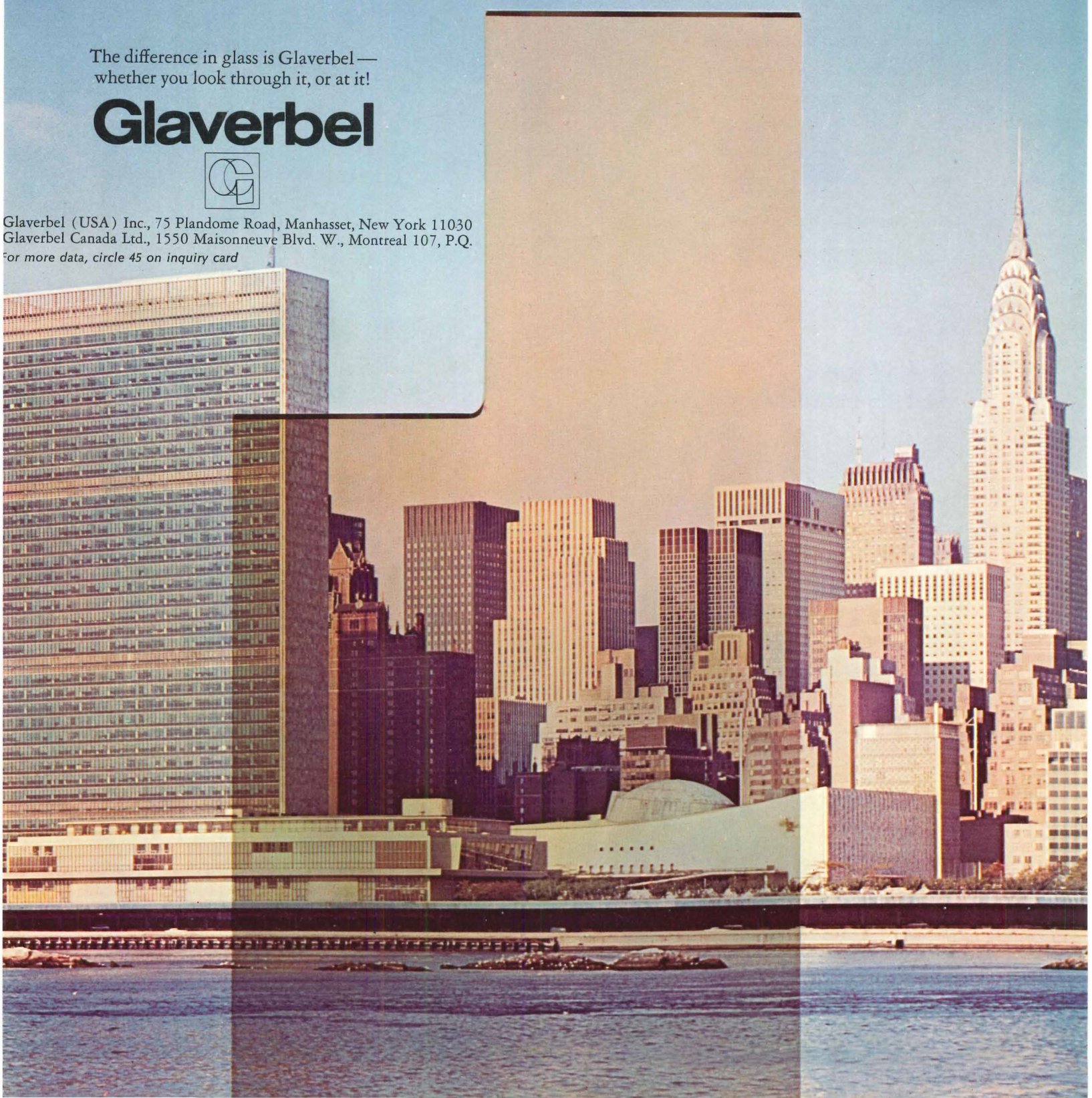

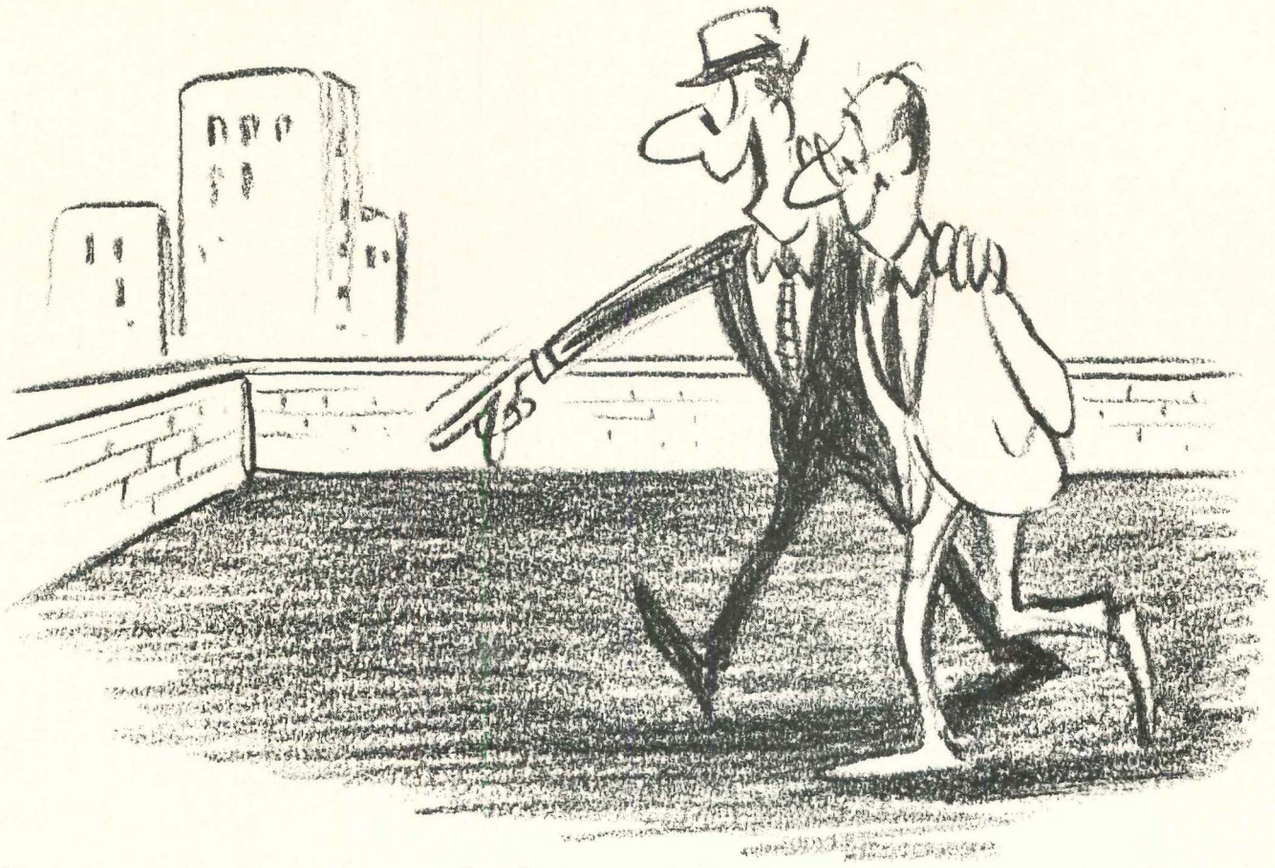

Some free advice on your roof that may be cheaper in the long run

because J-M's built-up roofing experts have knowledge no money can buy.

Free Advice?

That's right.

Suppose you have an existing built-up roof that is leaking, or it's not leaking but it's getting to look like it might, or it's along in years and you'd like to give it a physical. Maybe you're designing or building a new structure and you'd like recommendations for the built-up membrane as well as the proper structure and substrate for the roof.

Just call your J-M district sales office or write us. We'll send a J-M roofing specialist to look at your plans or inspect your existing roof thoroughly. A man who is trained in all aspects of built-up roofing and knows his business (otherwise we wouldn't let him loose).

If our roofing specialist is stumped (it happens) he'll consult one of our 11 district engineers, who have amongst them over 250 years of intensive experience in built-up roofs.

They'll give you a detailed recommendation to stop your leak, to prolong the life of your old roof, or to design your new one.

And their advice is free.

In the long run it is often better than a lot of advice that you pay good, hard money for. Because it's backed by more than a briefcase and maybe a couple of file cabinets. Backed by the research facilities and the in-depth experience gathered in well over 100 years in the built-up roofing business by one of the world's largest producers of built-up roofing materials.

Furthermore, you can be sure that we'll recommend what we honestly feel is right for your situation. We make and sell just about everything in the way of built-up roofing. So we have no axe to grind.

If you decide to follow our advice we'll put you in touch with qualified contractors who will use quality J-M roofing materials to apply your new roof or bring your old roof up to snuff.

Maybe you'll want to do business with someone else. Maybe you have a nephew who sells roofing. Naturally, we'll be disappointed. But we won't cry. We get a lot of business this way. And if some jobs go somewhere else, in the end what helps the roof owner eventually helps J-M.

In any case, we at J-M stand behind our materials and our qualified contractors. Back them with roof bonds. And if something does go wrong, you can be pretty sure we'll still be around to correct it. After all, we have been in business for over 100 years.

For your free advice, call your J-M district sales office, or write: Johns-Manville, Box 290 B-1, New York, New York 10016.

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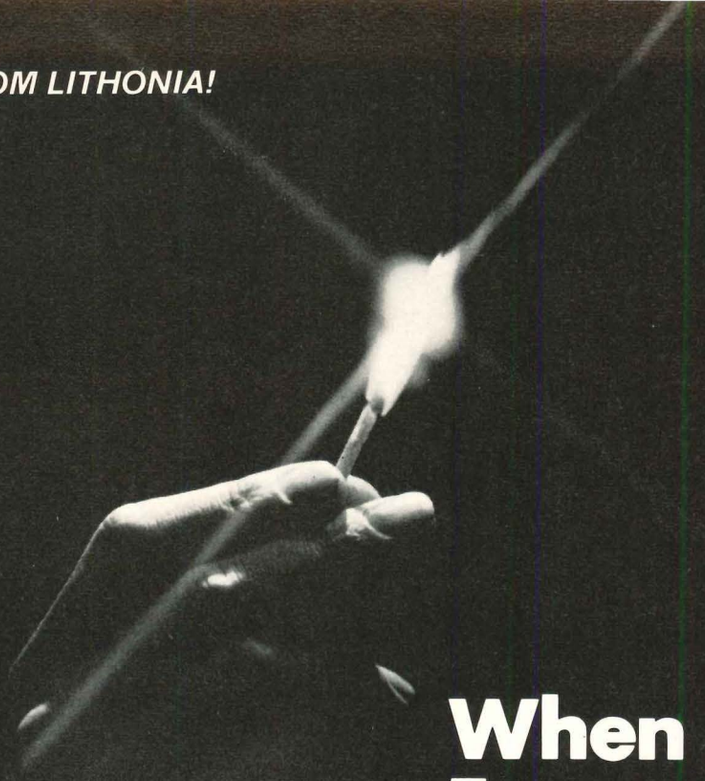
FIRST FROM LITHONIA!



When Emergency Lighting Is Needed, It's Really Needed.

That's why Lithonia uses all solid state components, sealed, rechargeable maintenance-free NI-CAD batteries . . . and we back it up with a full five (5) year unconditional guarantee plus an owner warranty reminder program.

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Specify Lithonia. Now, More Than Ever, Your Best Value in Lighting.

Lithonia®

A DIVISION OF NATIONAL SERVICE INDUSTRIES, INC.

BOX A □ CONYERS, GEORGIA 30207 □ 404/483-8731

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For next year: another gain in total building! Following a 1971 gain of 17 per cent in value of newly contracted construction, another year of moderate gains; strongest are stores, hospitals and factories.

F. W. Dodge construction outlook: 1972

Prepared by the Economics Department, McGraw-Hill Information Systems Company (formerly F. W. Dodge Company)
George A. Christie, Vice President and Chief Economist

Even before the New Economic Program was dramatically revealed on August 15, it was quite generally recognized that 1972 was shaping up as a big year—at least by Gross National Product measures. It was to be the year when most of the promises and expectations that never quite materialized in 1971 would finally pay off. *The Administration's new program not only improves the chances that next year really will show this gain; it should also make this more meaningful.*

This "standard" GNP forecast for 1972 is now $1,150 billion—up a cool $100 billion for the year—and it's about as solidly based as such estimates can be. Funny thing is that most 1972 GNP estimates that were being made back in the early part of August (weeks before the NEP was revealed) also came within a couple of billion one way or the other of $1,150 billion. It doesn't mean that the new program won't have any important effect. It will. But its impact will be more on the *quality* than on the quantity of next year's economic activity.

Early estimates of 1972 were big in numbers, but small in the achievement of economic goals. Most of the expected gain was more inflation, leaving an uncomfortably high rate of unemployment and unused industrial capacity at next year's end. The President's August 15 surprise package sent economists eagerly back to their worksheets with a new set of variables to cope with, and the expectation of happier results.

How much more *real* GNP will the NEP create in 1972? The answer hinges on the interplay between the stimulative and the repressive parts of the program.

An estimate by the Council of Economic Advisors attributes a "positive impact of $15 billion" and half a million new jobs to the combination of consumer tax reductions and business investment incentives.

But this is a two-way program. Its purpose is not only to encourage more spending, but to suppress inflation at the same time. If Phase II of the wage/price freeze can hold next year's average price rise to something like 3½ per cent (in contrast to the recent 5 per cent a year rate of inflation), this change would have the effect of deflating the pre-NEP estimate of 1972 GNP by about $15 billion (i.e., 1½ per cent of a trillion dollars). The interesting result: an addition of up to $15 billion of new demand *and* the elimination of an equivalent amount of next year's inflation. That puts you right back at the same $1,150 billion total as before, but with the very important difference that, to the extent the program works, it means 1972's GNP would be improved in its "quality" by as much as $15 billion of *real* goods and services . . . and jobs that go with it. That's the difference between a good year and a *very* good year.

One important side effect of the midyear revision of economic policy was to resolve the worsening monetary dilemma. By early last summer the Federal Reserve Board's position had become intolerable. No longer could it play the Administration's losing monetarist game (support recovery with massive doses of credit) without compounding inflationary pressures. Yet, the decision to slow the pace of monetary growth couldn't help but aggravate already rising interest rates and possibly cause the fragile recovery to abort.

The wage/price freeze (and its Phase II sequel) takes the Fed off the hook by assuming most of the burden of anti-inflationary restraint. Monetary policy-makers can now give top priority to holding down interest rates and insuring an adequate supply of funds to meet expanding business and personal credit needs in 1972.

Other ways that the New Economic Program will affect construction markets in 1972:

- Federal appropriations for public works are in for another round of tight budgeting as the sacrifice of several billions of tax revenue widens the already huge deficit.
- Some business investment funds may be diverted from construction for a time as the new investment tax credit makes machinery and equipment a better buy than buildings.
- Construction costs—like all other costs—will be rising more slowly in 1972.

National construction outlook

Business facilities: By the time the 1970 recession hit "official bottom" last November, it left the business construction market heading in all directions at once. Contracting for new industrial plants was badly depressed (no surprise); commercial building was running more or less flat (some offsetting trends at work here); and electric utility construction was expanding vigorously (with no apparent regard for the uncertain state of the economy).

By mid-1971, however, a more meaningful pattern was beginning to take shape:

- The year-long decline of industrial construction contracts had leveled off, and there was just the hint of a tenuous recovery. Even with this improvement, though, the flow of new projects was less than the value of old work being finished, so that industrial construction *in progress* was still declining through mid-1971.
- Commercial building was less in doubt. Not only did the rate of contracting advance firmly through the first half of the year, but the value of this new work was well in excess of completions, and the work in progress showed a solid gain.
- Electric utilities came through with a burst of huge projects in the opening months of 1971, and by midyear contract value was running ahead of 1970's record total by nearly a billion dollars.

All in all, contracting for business construction improved significantly (though not uniformly) between the low point of the recession and the middle of 1971. Here's how we see these trends in industrial, commercial, and utility construction developing through 1972.

Industrial building: The hard facts of the manufacturing plant construction market

are these. At mid-1971, industrial production was no higher than it was almost a year and a half earlier. Yet during that non-growth period, manufacturers continued to add new capacity faster than they retired old facilities. Result: excess capacity is more of a burden at present than it was even during the recession year of 1970.

Not all the facts are that grim, however. While production has been listless, some things have changed for the better, suggesting that industrial building will not stay depressed for too much longer. One is *profits*. Another is *confidence*.

Nothing will dampen businessmen's enthusiasm for investment in new facilities faster than a declining profit curve. Manufacturers' profits declined all through 1970, culminating in an especially weak fourth quarter. In 1971's first half, however, the combination of higher prices and cost-saving measures taken during the recession began to pay off in sharply higher earnings on much the same volume of output.

This much happened before the NEP. The new program, with its tax advantages and shelter from foreign competition, provides the basis for expecting further improvement in profitability. Still needed, of course, is the overdue release of pent-up consumer demand to raise output and take up excess capacity. This, too, seems finally on its way.

In any event, there is bound to be a lag before the anticipated rise in production and earnings sets off a surge of industrial building. By mid-1972, however, we expect to see a strong pickup in the rate of contracting for new industrial buildings which will be needed for 1973 operations. In 1972 the potential gain in contract value of industrial construction is as much as 25 per cent over 1971's depressed level.

Offices: The letdown from the big office building boom that spanned the two years between mid-1968 and mid-1970 has been gentler than expected. That's partly because its aftereffects are stretching out.

Because so much of that surge at the end of the Sixties was concentrated in just a few dozen outsized skyscrapers, there are two consequences that bear on 1972's outlook. One is that a disproportionate share of the boom was concentrated in only a few of the nation's largest metropolitan areas. The other is that very little of that construction has yet been completed. Most of those buildings will be ready for occupancy in 1972, and the anticipation of all this oncoming space has already affected office rental rates, even though vacancies are still generally low.

With the prospect of adequate financing in 1972, this pattern of a rising volume of smaller office buildings filling the void left by the decline of the skyscraper should continue, yielding a total contract value slightly above 1971's $4.7 billion, but well below the record $5.4 billion contracted in the peak year of 1969.

Stores: Unlike offices and industrial buildings, both of which declined in 1970, store building has been little affected by the recession. Contracting for stores and warehouses held steady at a $3.8 billion level through 1969 and 1970, and then began to move ahead around the middle of 1971. A closer look at this recent upturn shows that it came entirely in shopping centers, bearing out last year's expectation that a strong rise in homebuilding would soon generate a wave of store construction.

The existence of this lag between housing and stores, together with the prospect of another big residential year ahead, suggest that most of the potential for growth of store contracting has yet to be realized. And this prospect for a big gain in 1972 is further reinforced by the expectation of a year of well-above-average consumer buying. A gain in the range of 15-20 per cent in contract value would be in line with these trends.

Institutional buildings: While the business construction market is showing little in the way of actual improvement in 1971, but much in the way of potential for 1972, the institutional building market is quite the reverse. Here there has been steady recovery from the low point in contracting that coincided with the credit crisis of spring 1970. As money markets eased last summer and bond rates retreated from their historic highs, the sale of new issues to finance the construction of schools, hospitals, and other institutional buildings surged ahead. With funding resumed, the rate of contracting soon recovered to its pre-1970 plateau, but the potential for continued growth beyond this level—even in a favorable finance climate—remains in considerable doubt.

Educational buildings: Most of the difficulty with institutional building can be found in its single largest category—the $6 billion a year educational sector. Having recovered from last year's credit crunch (which cut 1970's total by 6 per cent despite a good second half), the school building market now has nowhere to go.

Positive forces are hard to come by these days. At the lower grades, demographic trends have already turned the corner, and they'll be working their way through the higher levels in years ahead. Elementary enrollments have been declining for two years, and the under-5 age group—the student population of the near future—is some 3 million children smaller than it was 10 years ago. (Some additional capacity will be needed to meet growing relocation demand that springs from the housing boom, however.)

At the other extreme, higher education is where you find the only real justification for construction to meet the needs of rising enrollments. One indication of how the educational building market is changing is that in 1971, for the first time, we are providing as much new classroom space in colleges as in elementary schools. Now, with the added demands created by returning servicemen and the trend toward open admissions, college construction should be growing even faster, except that not many of these institutions can afford expansion, even with Federal aid.

These several cross-currents will force next year's total of educational building contract value nearly 6 per cent below 1971's unusually high total back to a level more in line with current needs. The composition of the 1972 total will continue to shift: Less building at the lower grades; steady in the middle; expansion at the top —but with severe budget restraint holding the growth of colleges below potential.

Hospital and health facilities: Contracting for construction of health treatment facilities showed the same stop-and-go sequence during 1970 and 1971 as educational building. All that means is that hospitals—like schools—need financing. And now, with that interruption out of the way, the essential difference between these two institutional building markets stands out clearly. The difference is *need,* and the need for health facilities is in no way diminishing, nor even static.

Experience of the past decade shows that the public is only too willing to accept all the medical service that government and private health programs will support—even if it means driving the price of these services out of sight. Hospital construction, like every other aspect of the health industry, has mushroomed, and so has the cost of building hospitals. A new hospital costs about $50 per square foot, up from $35 a foot as recently as 1967. (The current average for *all kinds* of nonresidential buildings is about $22-$23 per square foot.)

A new Federal study of the nation's health care costs (prepared by HEW to help Congress evaluate various proposals for national health insurance) predicts that health costs will rise by another 50 per cent by the middle of this decade. Even allowing for the usually generous assumptions built into such studies, there's no evidence of any slowdown of the strong upward trend of the Sixties in the making. In 1972, contracting for hospital and health facilities looks headed for a gain of at least 10 per cent.

Housing: It was obvious right from the start that 1971 was going to be an exceptional year for housing. Just the same, the year wasn't very far along before it became clear that all but the most optimistic of forecasts were turning out too low. They were raised, and raised again, finally clustering around the magic 2-million mark. This total of mostly site-built, and a few modular, one-family homes and apartments, plus an additional 400,000 or more mobile homes, finally brought housing production in touch with HUD's much-heralded goals.

Shelter is becoming a *growth* industry, and the old counter-cyclical stereotype no longer applies. Two important changes

that have been brought about in the housing sector itself are making the difference.

One is the increasing role of the Federal government in generating a sustained volume of low- and middle-income housing demand through its several subsidy programs. Until 1969, Federally assisted housing never made up more than 10 per cent of total starts. In 1970, subsidized units accounted for nearly 30 per cent of all dwellings built, and they are slated to stay in the 25-30 per cent range at least through the mid-Seventies, providing a solid base of half-a-million or more units per year.

The other important change is in the mortgage market, where most of housing's cyclical problems used to have their roots. Left to their own devices, the thrift institutions, which supply most of the nation's mortgage money, could usually be counted on to run dry whenever the general demand for credit (usually paced by strong business demand in periods of expansion) heated up. Now, however, the operations of GNMA, along with FNMA and FHLBB, are helping to offset the severe swings in the flow of funds available for housing that originate in other sectors of the economy. One consequence of these stabilizing forces is finally to put the emphasis of forecasting housing activity back where it belongs: more on the demand for housing; less on availability of mortgage money.

This is not to suggest that the role of the mortgage market can now be ignored. It is still important, but no longer all-important in determining how much housing demand will be served. What has been eliminated is much of the risk of periodic "crunches." On the other hand, virtually all of the large gain in housing that took place during the first half of 1971 was in privately financed, *un*-subsidized housing. The number of Federally assisted units started in this period was barely equal to those started in 1970's first half, and considerably fewer than during last year's final six months. The big push in 1971 came almost exclusively from the enormous build-up of savings in the thrift institutions, as consumers held on to an abnormally high proportion (over 8 per cent) of their incomes during the recession and the tenuous early recovery. On the strength of this heavy accumulation of deposits, commitments for future mortgage loans were twice as high at mid-1971 as they were at the start of the year, assuring steady support for a continued high rate of homebuilding at least into early 1972.

But what happens when the consumer begins to spend more and save less (perhaps even draws upon some of his past savings) as he is expected to do next year? When conditions begin to put a crimp in the flow of mortgage funds is when HUD's new powers really begin to pay off. Not only is HUD prepared to suppress the tendency for mortgage rates to rise by providing massive secondary support to the mortgage market, but it also plans to increase the number of subsidized housing starts in 1972 to nearly 600,000—aiming at a total production goal (including mobile homes) of 2.7 million units!

This is heady stuff. It's time to start asking whether the housing market can absorb an average rate of 2½ million shelter units per year for any length of time right now. That's roughly *double* the rate of family formation, and even after allowing for replacement of removals from the housing stock at as high a rate as 700,000 units, what's still left over—more than half-a-million units per year—will exhaust before long the backlog of demand carried over from the low-volume Sixties. The exact point of short-run equilibrium is never possible to find, but it can't be far from the current rate of output.

We estimate the practical ceiling for 1972 homebuilding to be the combined total of 1.95 million site-built and modular units and about 400,000 mobile homes (see table), although there could easily be some crossover at the fringes of these markets.

National estimates/1972

construction contract value (millions of dollars)	1971 preliminary*	1972 forecast	change
nonresidential buildings			
office buildings	$ 4,700	$ 4,850	+ 3%
stores and other commercial	4,775	5,650	+18
manufacturing	2,525	3,150	+25
educational	6,100	5,725	− 6
hospital and health	3,050	3,350	+10
other nonresidential buildings	4,350	4,475	+ 3
TOTAL	$25,500	$27,200	+ 7%
residential buildings			
one- and two-family homes	$21,050	$20,750	− 1%
apartments	12,000	11,600	− 3
nonhousekeeping	1,450	1,525	+ 5
TOTAL	$34,500	$33,875	− 2%
TOTAL BUILDINGS	$60,000	$61,075	+ 2%
nonbuilding construction			
streets, highways, & bridges	$ 7,900	$ 8,700	+10%
utilities	5,300	5,400	+ 2
sewer & water supply	3,250	3,750	+15
other nonbuilding construction	3,350	3,725	+11
TOTAL	$19,800	$21,575	+ 9%
TOTAL CONSTRUCTION	$79,800	$82,650	+ 4%
Dodge index (1967=100)	145	150	
physical volume of floor area (millions of square feet)			
nonresidential buildings			
office buildings	170	174	+ 2%
stores & other commercial	374	434	+16
manufacturing	165	198	+20
educational	202	192	− 5
hospital and health	76	80	+ 5
other nonresidential buildings	159	160	+ 1
TOTAL	1,146	1,237	+ 8%
residential buildings			
one- and two-family homes	1,400	1,350	− 4%
apartments	825	775	− 6
nonhousekeeping	68	70	+ 3
TOTAL	2,293	2,195	− 4%
TOTAL BUILDING	3,439	3,432	——

* Eight months actual; four months estimated

SHELTER DEMAND
(thousands of dwelling units)

Type of Housing	1970	1971e	1972f
Site-Built Housing			
One-family	800	1,025	925
Multi-family	615	1,000	925
Modular Housing			
One-family	25	50	75
Multi-family	—	—	25
Mobile Homes	400	450	400
Total Shelter	1,840	2,500	2,350

That's a bit less than most forecasts of housing demand for the next year. But whether 1972's housing total comes out 100,000 units more than 1971's 2.5 million or 100,000 less isn't what is most important. What counts most is that 1972 will be another very strong housing year. The homebuilding market isn't going to come apart at the seams next year just because economic conditions will improve.

Public facilities: Public works construction is a blend of the extremes of stability and instability. A large element of predictability (especially over longer periods of time) is built into this category by the Federal Highway Trust Fund, which, along with matching state and local money, virtually guarantees the continued growth of road-building. But at the same time there is no scarcity of circumstances that create a high degree of instability in contracting for public projects. Among them: the uncertainty of new appropriations for national programs, particularly in periods of large Federal deficit; the occasional freezing of already appropriated funds; erratic allocations from the trust funds; the vagaries of the bond market; the erratic flow of very large jobs (e.g., a dam, water supply project, or transit system) which are common to this group; and growing public concern about the environmental side-effects of major projects.

The two new Federal trust funds (for mass transportation and for airports) are progressing unevenly. The transit fund has reached the point where it is providing close to a billion dollars in annual grants for construction and equipment. However, the airport fund is still only offering planning and development money, and its impact on construction is a year away.

Federal government: With general tax revenues already depressed by under-employment, the Federal budget deficit is about to slip into the $30 billion neighborhood as a result of the additional business and personal tax concessions which are to be the stimuli of the New Economic Program. Under these conditions, Federal spending will be at least as tightly controlled as last year, maybe more so. And among some of the most controllable of Federal expenditures are the funds for new construction by the Corps of Engineers and the Bureau of Reclamation. (In times of budget stress, it is the start of new work that takes the biggest cuts, while every effort is made to continue funding jobs that are already in progress.) No gain in *direct* Federal construction over 1971's already sharply curtailed level of contracting is anticipated. And with one outstanding exception—outlays for water resource development—Federal construction grants and loans to state and local governments are also bound to be tightly budgeted in 1972.

State and local governments: With or without Federal help, state and local governments are showing determination to move ahead with their development programs. After nearly being frozen out of the bond market in 1969's credit squeeze, these governments borrowed heavily for construction during 1970 and 1971 as conditions eased. This year's municipal bond sales are running some 30 per cent ahead of 1970's record total, and double the 1969 amount. With little prospect of any increase in Federal help next year, states and municipalities will be borrowing heavily in the bond market again in 1972.

Regional construction outlook

Northeast: If nonresidential building is to show a gain in this region next year, something will have to compensate for the lack of potential in office building here. With so much new rentable space now becoming available and looking for tenants—the consequence of the bulge of contracting two years ago in New York, Boston, and Washington—enthusiasm has quite naturally faded for a time. In 1971, the value of contracts for office buildings is running one-third below the previous year's amount, and 1972 isn't likely to be any stronger.

Compensating growth will be found next year in two other types of business-related construction: stores and factories. The need for retailing facilities—stores, shopping centers, and warehouses—roughly parallels the trend of housing, and housing in the Northeast has been sluggish for most of the past decade. That is, until 1971's residential boom changed things. With the area's housing markets facing a lot of catch-up over the next few years, prospects for store buildings are especially good.

Midwest: More than any other region, the Midwest's outlook for nonresidential building in 1972 is dependent on the success of the new Economic Program. Durable goods manufacturing—both industrial products and consumer durables—is where the recession of 1970 had its concentrated impact, and the Midwest is where most of the nation's heavy manufacturing is.

In almost every way, this region can look for improved demand for the output of its major industries in 1972. Steel is past its strike-inventory adjustment and demand is picking up; the region's auto industry is anticipating a banner year; household appliance demand will be very strong, as 1971's home-building boom is followed by an equally strong 1972; machinery and industrial equipment will gain with the help of the new investment tax credit. "NEP" is pronounced with a strong Midwestern accent, and, in this atmosphere of change for the better, the region's employment and commerce are bound to respond.

For all types of construction taken together, the largest gains of any region in 1972 will be found in the Midwest.

South: Of the four major regions, it was the South that did most of the growing during the decade of the Sixties. And since rapid economic growth demands more than the usual volume of construction, this region has been a consistently strong market for contractors and building materials suppliers.

Industrial construction is a case in point. Contracting for manufacturing facilities has shown big gains in the South in nearly every year of the decade, and particularly since the petro-chemical industry decided to call the Mid-South its home.

The region's demand for housing has kept pace with its strong industrial growth. From the beginning to the end of the Sixties, the South's share of the national total of apartment contracting rose from only 12 per cent to the current 30 per cent. (The Florida condominium boom has had something to do with this.)

West: Judging from 1971's construction statistics, Westerners seem to be ignoring the defense/aerospace cutback and the fact that net migration to California has dwindled almost to zero. Building is still going on as usual—for the time being, anyway.

Through most of 1971, the West has shown a surprisingly strong 10 per cent lead of 1970's construction contract value, and a pattern of growth much like the national one; all of the gain concentrated in housing, with nonresidential contracting holding about even.

Diversification of this region's once-triangular base of orange juice, celluloid, and airframes has obviously come a long way. But without migration, and with its key aerospace industry still in trouble, there's little justification for continuation of the high rate of home-building or for the expectation of a solid recovery of nonresidential building in the near future.

While 1972 contracting for industrial buildings in the West is likely to improve over 1971's depressed value, the gain will be well below the national average. Commercial building also holds potential for a modest gain.

Summary

How do you top a year like 1971 which virtually exploded with a 17 per cent gain in the value of newly contracted construction? Not by very much.

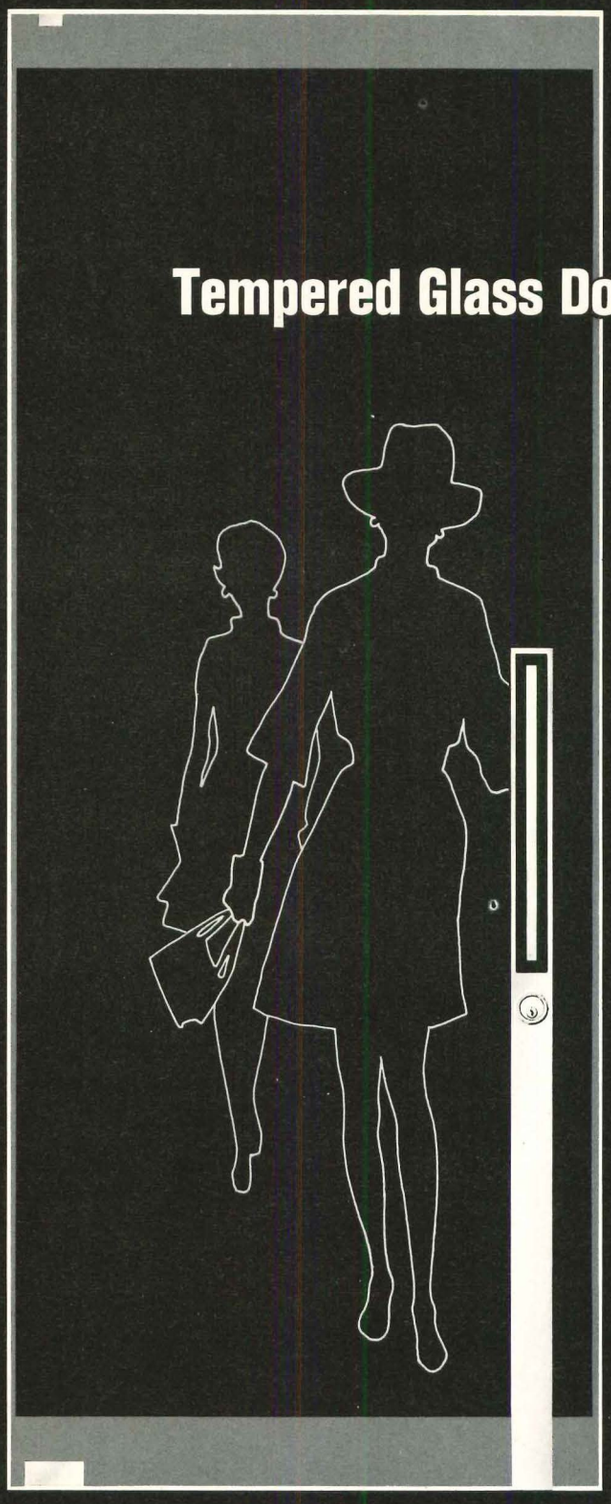
For a variety of reasons, some of the biggest categories of construction now offer little potential for further growth for the time being. Without housing's $10 billion gain in 1971, the past year would have been a pretty dull one, but we'll do well to hold close to the current high level of residential contracting through 1972. Construction of electric generating facilities, another of 1971's big gainers, offers good long-term prospects, but contracting has probably reached a temporary peak right now. Educational building's unusual gain in 1971 was mostly to make up for 1970's credit squeeze, and there's no basis for continued growth there. Nor is there much room for expansion in the office building market, which is still digesting the output of its 1968-1970 boom period. Together, these four nongrowth categories add up to a total of nearly $50 billion—60 per cent of the 1971 total of $80 billion in construction contract value.

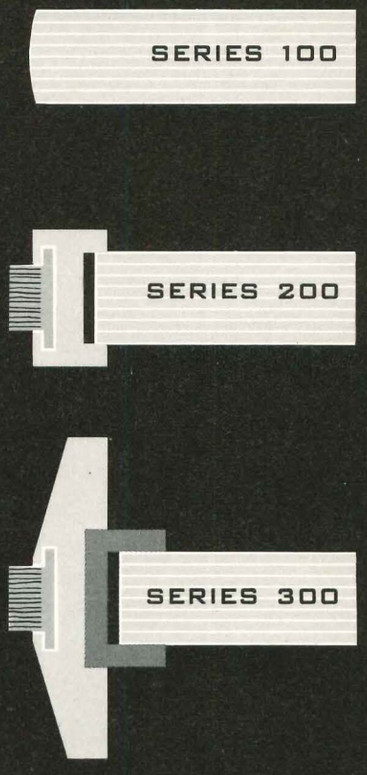
In the other 40 per cent of the construction market, however, there are several opportunities for strong expansion in 1972. Some of the standouts: *industrial building*, now very depressed, could increase by as much as 25 per cent as economic recovery accelerates next year; *stores and other commercial building* will respond to the stimuli of the housing boom and rising consumer spending with a gain of more than 15 per cent; *transportation* (highways and mass transit) and *environmental work* (sewer and water facilities) will go ahead between 10 and 15 per cent. The gains in these areas will provide most of the thrust that will raise 1972's total construction contract value another 4 per cent to a record $82.6 billion.

A gain of 4 per cent doesn't sound like much next to 1971's huge 17 per cent increase, except for two things. One is that it is 4 per cent *on top* of 17 per cent. It means that the very strong expansion in 1971 wasn't just a temporary surge, but was something that is here to stay—something that becomes part of the base on which future growth will be built.

The other has to do with the worth of next year's construction dollars. It's a hard fact of life that cost increases have been responsible for well over three-quarters of the "growth" in this industry since the middle sixties. Now, as we move into Phase II of wage and price control, there's good reason to expect that inflation will be taking less of a toll in 1972 than at any time in the past five years.

Tempered Glass Doors for Important Spaces





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New Goodyear gives Delta

Delta Airlines recently completed the first two-story passenger facility at Louisville's Standiford Field. The new upper boarding lounge allows Delta passengers to enter and leave the plane directly, at plane level.

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SPEEDRAMP systems have it all over conventional escalators when long walking distances are combined with a level change. They keep traffic moving smoothly, continuously. There are no bottlenecks because there are no disappearing steps to cause hesitation.

Passengers like SPEEDRAMP because they can put down their bags and just enjoy the ride. And handle baggage carts, wheelchairs and strollers without having to worry about moving steps.

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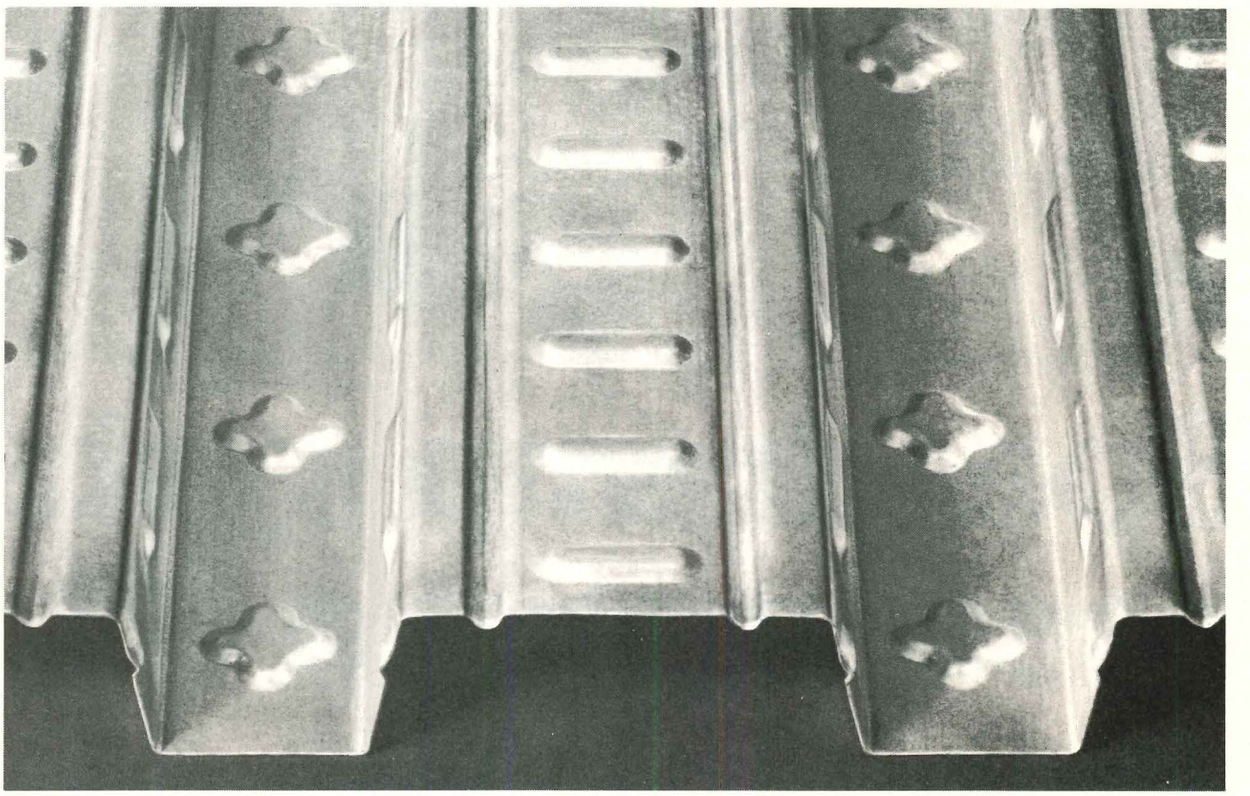

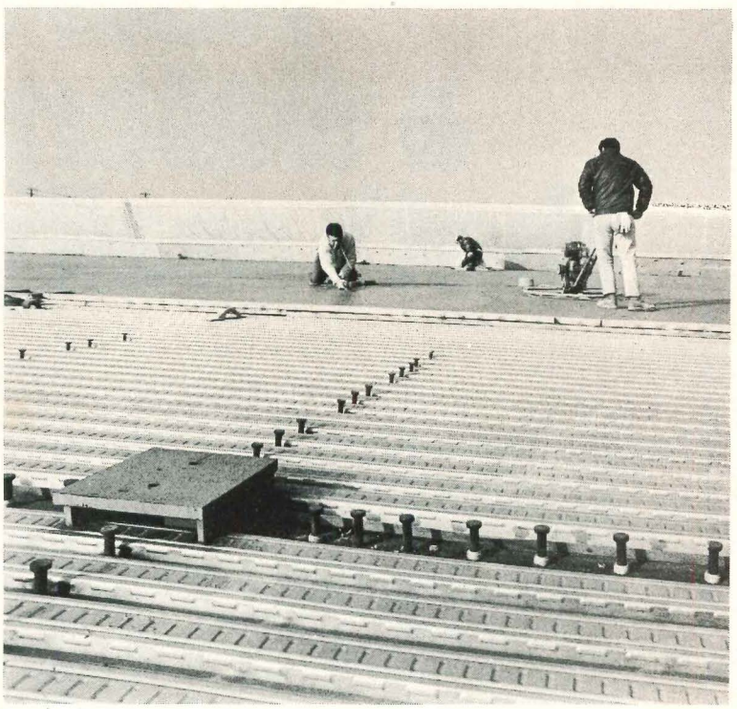

It can turn a roof into a floor.

It's not magic; it's just an example of the practical versatility of our SUPERBOND BC Deck–the composite deck with more bumps (embossments) than any other.

The Adam, Meldrum & Anderson department store, outside Buffalo, N.Y., was designed and constructed by Brown and Matthews for United National Corporation with a finished concrete floor (shown in photo) under the roofing.

That way, if AM&A wants to add more floors, all they have to do is take off the roofing and extend the steel framework (the square "plate" in the photo is the top of a column which will be covered by the roofing).

Our SUPERBOND BC Deck was chosen because it offers the greatest shear-bond resistance for maximum lateral strength and stability, and can easily handle the dead-weight load of the roof.

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SUPERBOND BC Deck comes in wipe-coat and 1¼ oz. galvanized, and prime coat painted. For more information, write for our free brochure WC-380R1.

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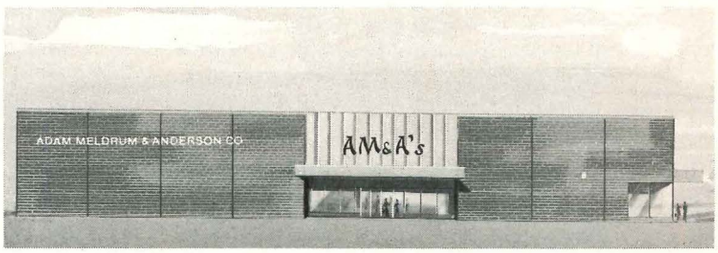

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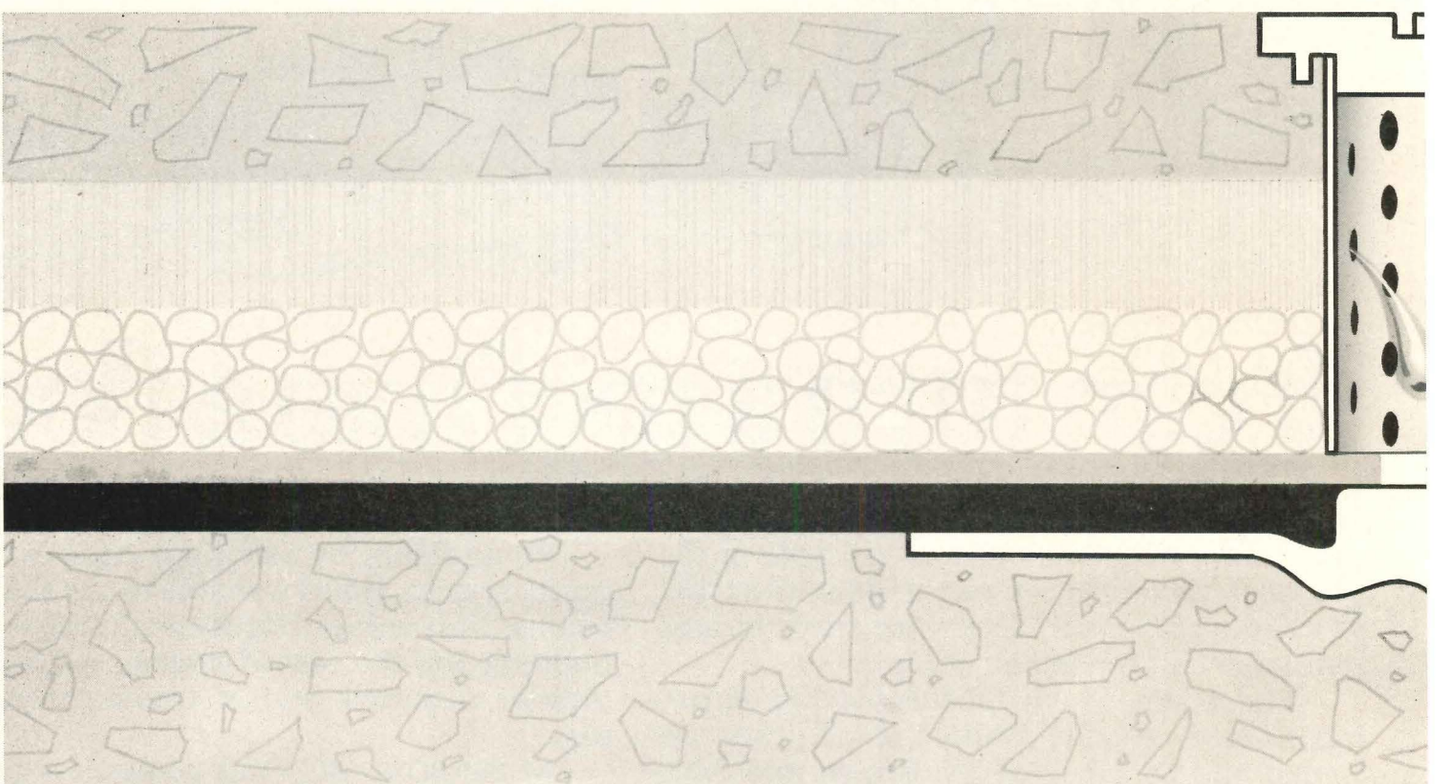
How to make a waterproof deck that's really waterproof.



Almost any bitumen, elastomer or membrane is waterproof.

Trouble is, it takes more than a waterproofing product to build a leakproof deck or plaza. Since most attempts to waterproof the traffic surface are doomed to failure, we think it's more important to get rid of water from each level of deck construction.

Here's a step-by-step method that does just that.

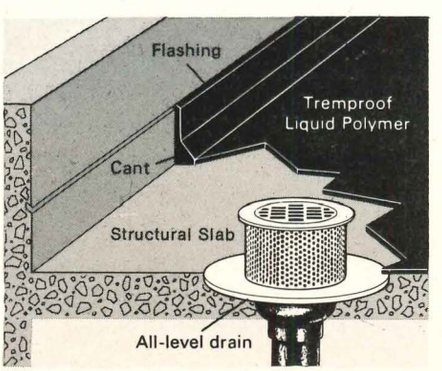
First, use a liquid waterproofing product that can be applied to the best-engineered concrete on the job site – the structural slab. Since the liquid adheres to the slab it will eliminate any lateral migration of water . . . just in case it penetrates the seal.

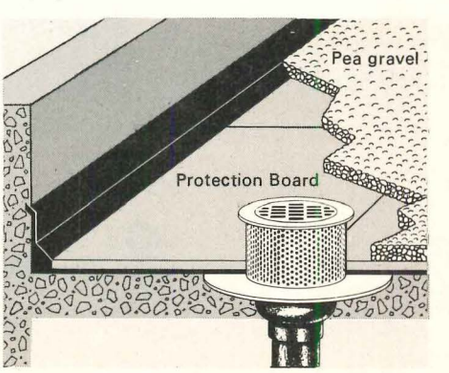
Next, protect the waterproof layer with a ⅛″ thick asphalt-impregnated board. That will prevent any punctures that could otherwise be caused by job-site activity.

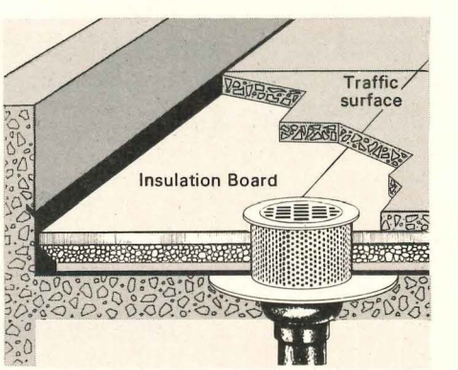
Now add a 1½″ to 3″ layer of washed pea gravel to act as a percolation layer that will collect transient water and carry it to the drain.

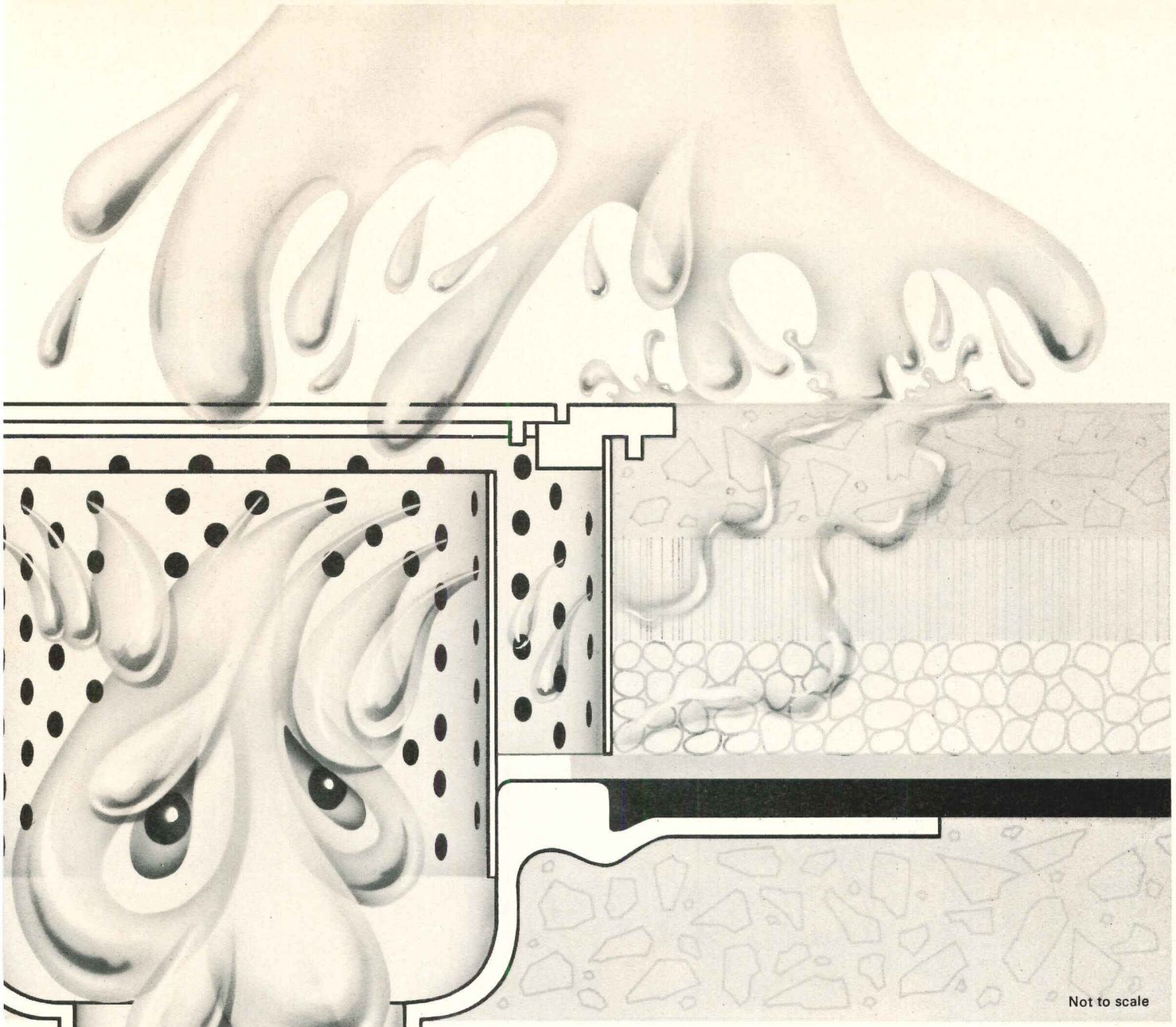
Then, put the insulation on top of the percolation layer. This will protect both the structural slab and the waterproofing system against stress caused by thermal variation.

Finally, put the traffic surface









into position on the insulation. To get rid of water from the layers of construction we've just described, you'll need a unique all-level drain. Like the one we've developed with the Josam Manufacturing Company. Where ordinary drains only handle surface run-off, our (patented) drain takes water and moisture vapor from each level in the system.

To meet all these requirements, you'll need a pretty special liquid waterproofing layer. Such as Tremproof Liquid Polymer. It's self-adhering and cold-applied. It has enough body to form a substantial cant strip and carry up vertical surfaces to provide a flashing. It eliminates the use of adhesives and joining tapes plus the time-consuming job of making a positive seal around projections. So you wind up with a flexible, seamless blanket.

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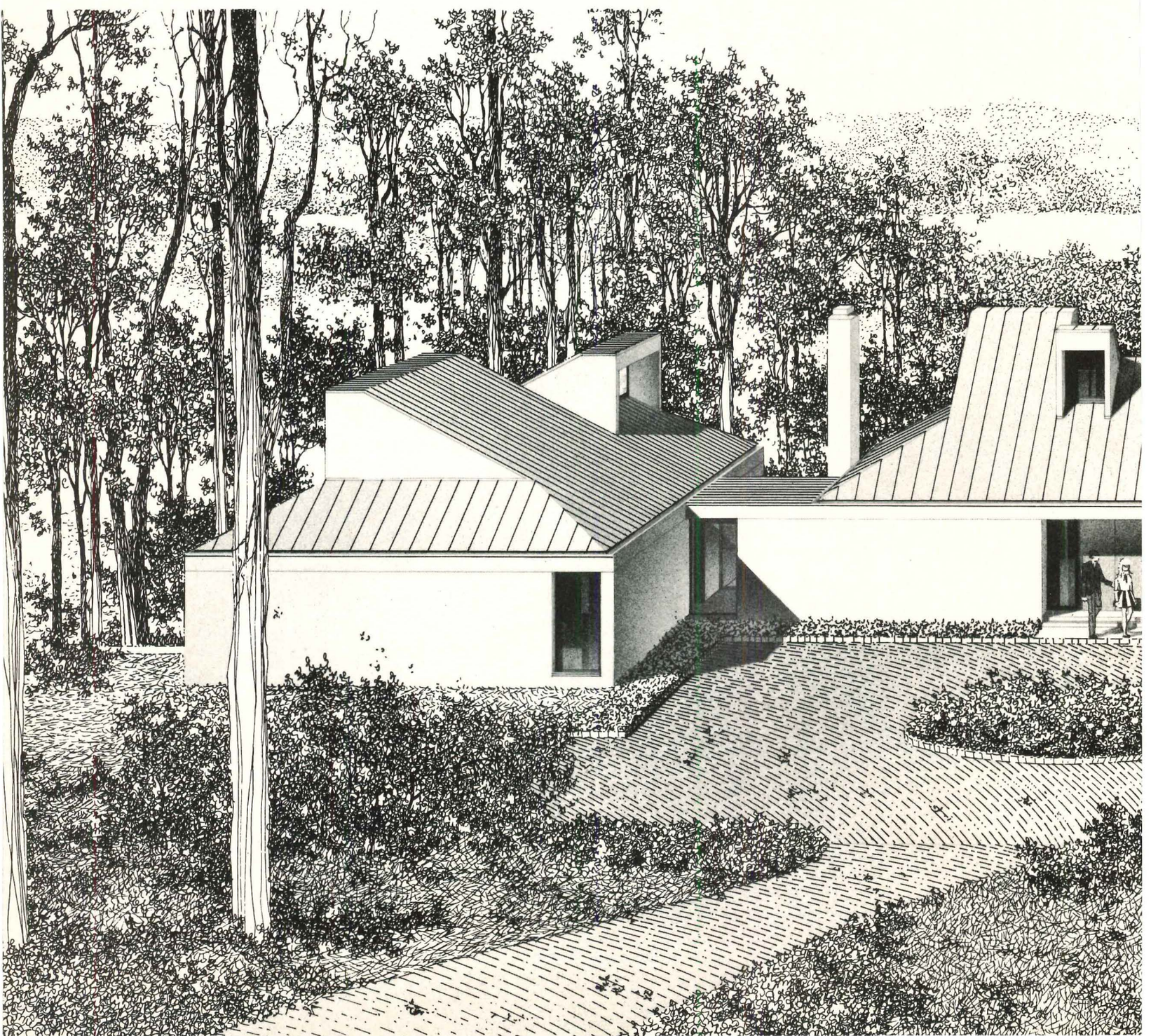
TCS: A PERFECT UNION... THE MARRIAGE OF TERNE AND STAINLESS STEEL.

A Long Island Residence Architect: Julian Neski, New York, N.Y. Associates: Barbara Neski, Ronald Bechtol



By coating 304 nickel-chrome stainless steel with Terne alloy (80% lead, 20% tin), an end product is created in which the superior qualities of both time-tested components are materially enhanced.

Among the many resulting advantages are unsurpassed durability, maximum resistance to corrosion, and natural weathering to a uniform dark gray.

We have called this product TCS.

In our considered judgment, based on prolonged and rigorous technical evaluation, it is the finest and most versatile architectural metal ever developed for a broad range of applications including roofing, fascia, flashing, copings, gravel stops and gutters.

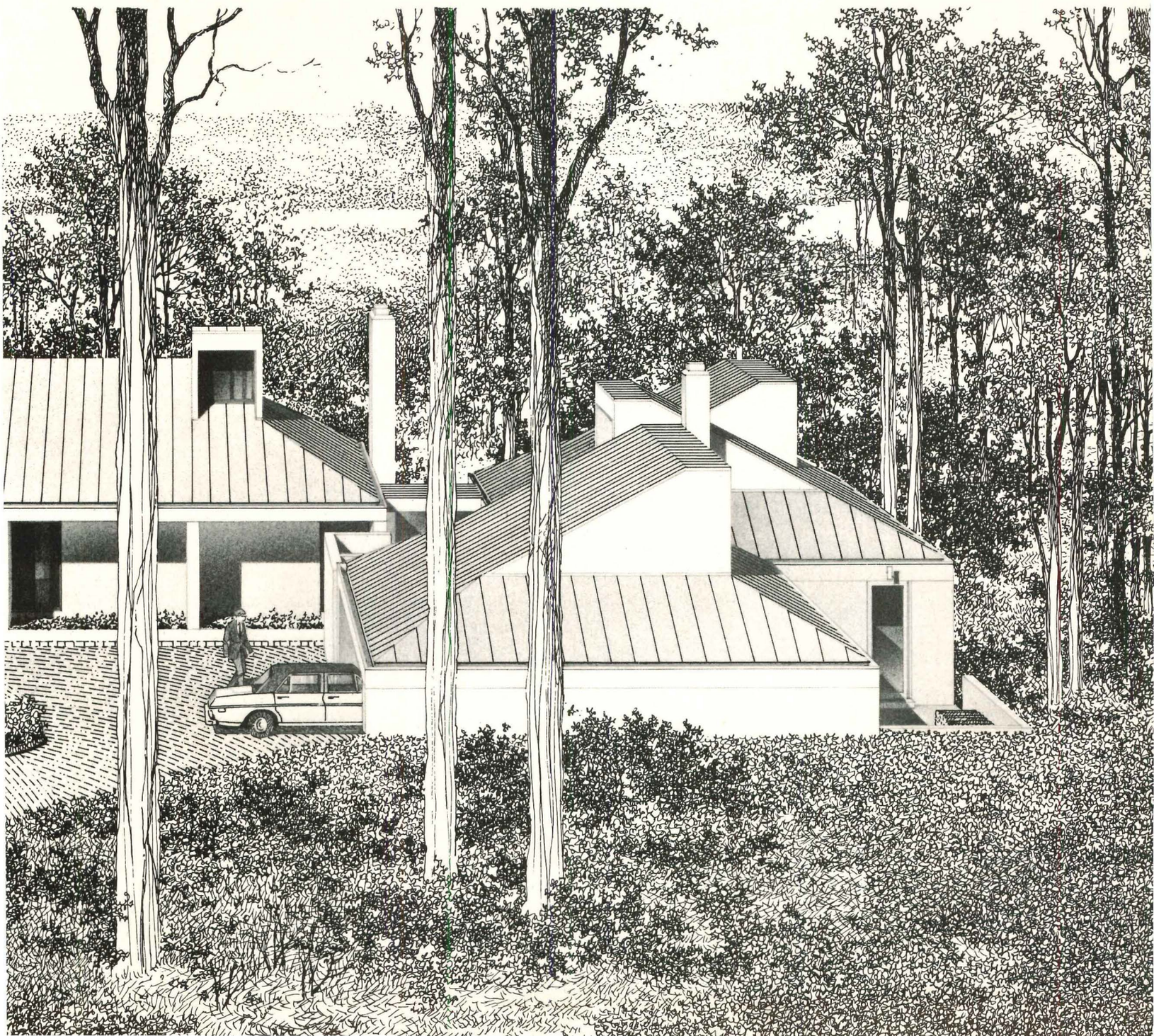
May we send you further information?

FOLLANSBEE

FOLLANSBEE STEEL CORPORATION • FOLLANSBEE, WEST VIRGINIA

For more data, circle 53 on inquiry card

Rendering by Brian Burr



INDEXES AND INDICATORS

Percival Pereira
Dodge Building Cost Services
McGraw-Hill Information Systems Company

BANK EQUIPMENT COSTS

Here is another hard-to-find list of prices.

Relocatable vaults: Available in modular sections; average vault 9 by 11 feet: $11,000.

Bullet resistive doors: Complete with frame, door closer, bullet resistive glass panel and cylinder lock: $700.

Night depositories: Available in both recessed and flush models designed to be installed with either square or round door: $3,000 to $4,200.

Receiving safes: From $900 for 20-inch to $2,200 for 36-inch; package receiver: $900.

Camera surveillance systems: Average system for small-to-medium-sized bank with two cameras, 16 or 35mm: $2,500.

Drive-in windows: Bay, flush and full-skirt models with manual or electric drawers: $2,900 to $3,700.

Walk-up windows: Single or double teller models: $2,600 to $5,000.

Remote transactions systems: Available in three basic types; one that operates with a captive carrier and closed-circuit TV; another with a free carrier and closed-circuit TV; a third with free carrier only: $15,000 to $25,000 per station.

Bullet resistive vision windows: $450 to $560.

Vault doors: Rectangular, 3.5 to 10 in. thick: $10,000 to $17,000. Circular, 7 to 16 in. thick. $7,400 to $28,000.

Building cost indexes

All the indexes on this page are based on wage rates for nine skilled trades, together with common labor, and prices of five basic building materials are included in the index for each listed city.

1941 average for each city = 100.00

NOVEMBER 1971

Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change year ago res. & non-res.
U.S. Average	8.4	367.3	344.8	359.8	350.8	+ 8.68
Atlanta	7.8	464.7	438.1	453.0	443.5	+ 8.88
Baltimore	8.0	388.1	364.8	378.1	368.4	+ 9.60
Birmingham	7.4	335.7	312.2	325.2	319.4	+ 7.33
Boston	8.9	366.4	346.2	363.4	352.4	+ 10.32
Buffalo	9.3	415.6	390.2	409.8	396.5	+ 9.26
Chicago	8.5	424.5	403.6	410.0	403.4	+ 8.60
Cincinnati	8.7	391.0	367.9	381.9	372.4	+ 10.96
Cleveland	9.6	421.0	396.1	411.3	401.5	+ 9.47
Columbus, Ohio	8.5	394.8	370.7	383.8	376.2	+ 7.43
Dallas	7.7	361.0	349.5	354.7	346.8	+ 9.53
Denver	8.3	397.1	373.6	393.3	379.3	+ 6.89
Detroit	9.6	414.0	394.4	412.3	397.6	+ 8.75
Houston	7.7	352.8	331.3	344.5	338.2	+ 8.08
Indianapolis	8.0	342.5	321.5	334.9	327.7	+ 9.69
Kansas City	8.3	349.0	329.7	339.2	331.7	+ 9.51
Los Angeles	8.3	409.4	374.2	397.9	389.9	+ 10.95
Louisville	7.6	362.2	340.1	354.2	346.7	+ 9.51
Memphis	7.6	341.9	321.1	331.6	327.2	+ 5.18
Miami	8.1	389.2	370.8	380.2	371.4	+ 9.09
Milwaukee	8.6	422.7	396.9	417.4	403.6	+ 7.62
Minneapolis	9.0	401.0	377.2	393.2	382.3	+ 10.02
Newark	9.0	366.1	343.7	361.3	352.0	+ 7.64
New Orleans	7.3	346.1	326.6	341.3	333.4	+ 7.33
New York	10.0	404.5	376.0	390.5	381.8	+ 8.25
Philadelphia	8.5	378.9	360.9	372.2	363.8	+ 8.36
Phoenix	7.8	207.2	194.5	200.1	197.2	+ 11.23
Pittsburgh	9.0	365.9	344.2	358.9	348.8	+ 10.85
St. Louis	8.7	380.3	358.9	375.8	364.1	+ 9.20
San Antonio	7.8	143.8	135.0	140.5	137.0	+ 4.50
San Diego	8.0	145.0	136.2	141.5	138.7	+ 5.93
San Francisco	9.2	523.6	478.5	519.4	503.3	+ 10.32
Seattle	8.8	367.7	329.0	365.3	350.6	+ 5.05
Washington, D.C.	7.9	346.6	325.5	335.9	329.2	+ 11.09

Cost differentials compare current local costs, not indexes.

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

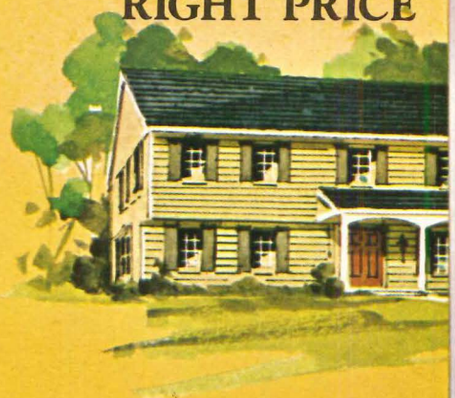
1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970 (Quarterly) 1st	2nd	3rd	4th	1971 (Quarterly) 1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	399.9	406.2	408.1	422.4	424.0	445.1	447.2	
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	323.7	330.3	332.2	348.8	350.3	360.5	362.5	
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	303.5	308.6	310.2	309.3	310.6	314.6	316.4	
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	300.5	305.6	307.3	328.6	330.0	338.9	341.0	
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	362.2	368.6	370.6	386.1	387.7	391.0	393.2	
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	332.8	338.4	340.1	348.5	350.0	372.3	374.3	
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	359.7	366.1	368.1	380.1	381.6	391.1	393.5	
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	310.4	314.4	316.1	327.1	328.6	341.4	343.4	
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	343.4	348.4	350.3	368.1	369.7	377.1	379.1	
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	355.2	360.5	360.6	377.4	379.0	384.6	386.8	
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	301.8	306.8	308.8	315.3	316.6	329.5	331.5	
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	346.4	355.3	357.3	361.9	363.4	374.2	376.4	
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	392.3	338.2	343.5	345.5	353.2	354.7	366.8	368.9	
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	341.6	346.6	348.5	361.1	362.7	366.0	368.0	
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	305.4	310.6	312.2	318.9	320.4	327.9	329.8	
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	351.1	360.5	361.7	366.0	367.7	378.9	381.0	
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	328.9	337.7	335.7	346.5	348.0	356.4	358.4	
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	316.9	321.6	323.3	327.2	328.7	338.1	340.1	
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	335.2	340.8	342.7	344.4	345.9	360.0	361.9	
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	455.4	466.9	468.6	465.1	466.8	480.7	482.6	
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	325.4	335.1	336.9	341.8	343.3	347.1	349.0	

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 ÷ 200.0 = 75%) or they are 25% lower in the second period.

Caradco C-100′

THE PERFORMANCE WINDOW PACKAGE AT THE RIGHT PRICE



Before C-100′ came along windows could be a pain. Like having to climb ladders or not being airtight. Our C-100′ did away with such nonsense. *The sash lifts out* for easy inside cleaning, then snaps back *weathertight*. What keeps it tight is something you get only from Caradco: *stainless steel weatherstripping* with proven trouble-free performance. So you can forget call-backs, enjoy *reduced on-site labor* costs. Factory treated and primed, too. It looks great. And it's a complete package—grilles, storm panels and screens. Now the clincher: C-100′ carries a competitive price. No wonder so many builders are switching to Caradco.

Caradco
Window and Door Division
Scovill

Main Plant, Dubuque, Iowa 52001 Eastern Assembly Plant, Hainesport, New Jersey Ohio Assembly Plant, Columbus, Ohio

For more data, circle 54 on inquiry card

OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry Card, pages 217-218.

WALL PANEL SYSTEM / Completely pre-finished aluminum panels ready for on-site assembly are described in a 6-page brochure. According to the company, it takes one man-hour to assemble about 50 square feet of wall under normal conditions. ■ Phelps Dodge Cable and Wire Co., Yonkers, N.Y.
Circle 400 on inquiry card

HOSPITAL LIGHTING / A 16-page application guide includes tables of 17 different types of lamps frequently used in hospitals, describing their physical, electrical and performance features. ■ General Electric Co., Cleveland.
Circle 401 on inquiry card

FIRE-RETARDANT PRODUCTS / A wide range of items including compounds for use in intumescent coatings, plastics and foams, and chemicals for flexible and rigid urethane foams is discussed in a brochure featuring the manufacturer's line. ■ Monsanto Co., St. Louis.
Circle 402 on inquiry card

CONTROLLED TEMPERATURE EQUIPMENT / Laboratory and production ovens and furnaces, chemical and medical research refrigerators are among the items discussed in an 8-page brochure featuring a complete line. ■ Hydor Therme Corp., Pennsauken, N.J.
Circle 403 on inquiry card

WALL COVERINGS / Seventeen geometric designs on vinyl and foil are illustrated in a 4-page brochure. ■ James Seeman Studios, Inc., Garden City Park, N.Y.
Circle 404 on inquiry card

OUTDOOR LIGHTING / A 1500-watt lamp reportedly providing high levels of precisely controlled light of excellent color quality needed for color telecasting is described in a 4-page brochure. ■ General Electric Co., Cleveland.*
Circle 405 on inquiry card

ILLUMINATED CEILINGS / A basic louver system composed of interlocking cells within cells which can accommodate decorative lighting accessories is presented in a 4-page brochure. ■ Neo-Ray Lighting Systems, Inc., New York City.
Circle 406 on inquiry card

COATINGS / An 8-page booklet discusses qualified coatings for plywood which supply color, texture and design freedom. ■ American Plywood Assn., Tacoma, Wash.*
Circle 407 on inquiry card

SEWAGE TREATMENT PLANT / A package-type plant fabricated of steel piate and delivered to the job site ready for installation is described in literature. The plant, consisting of a horizontal cylinder aeration compartment and a settling tank with a hopper-type bottom, will treat from 3,000 to 12,000 gallons per day. ■ Davco Mfg. Co., Thomasville, Ga.
Circle 408 on inquiry card

**Additional product information in Sweet's Architectural File*

For more data, circle 57 on inquiry card ▸

In hotels and motels everywhere Bally Prefab Coolers and Freezers are accepted as the standard for walk-in refrigerated storage

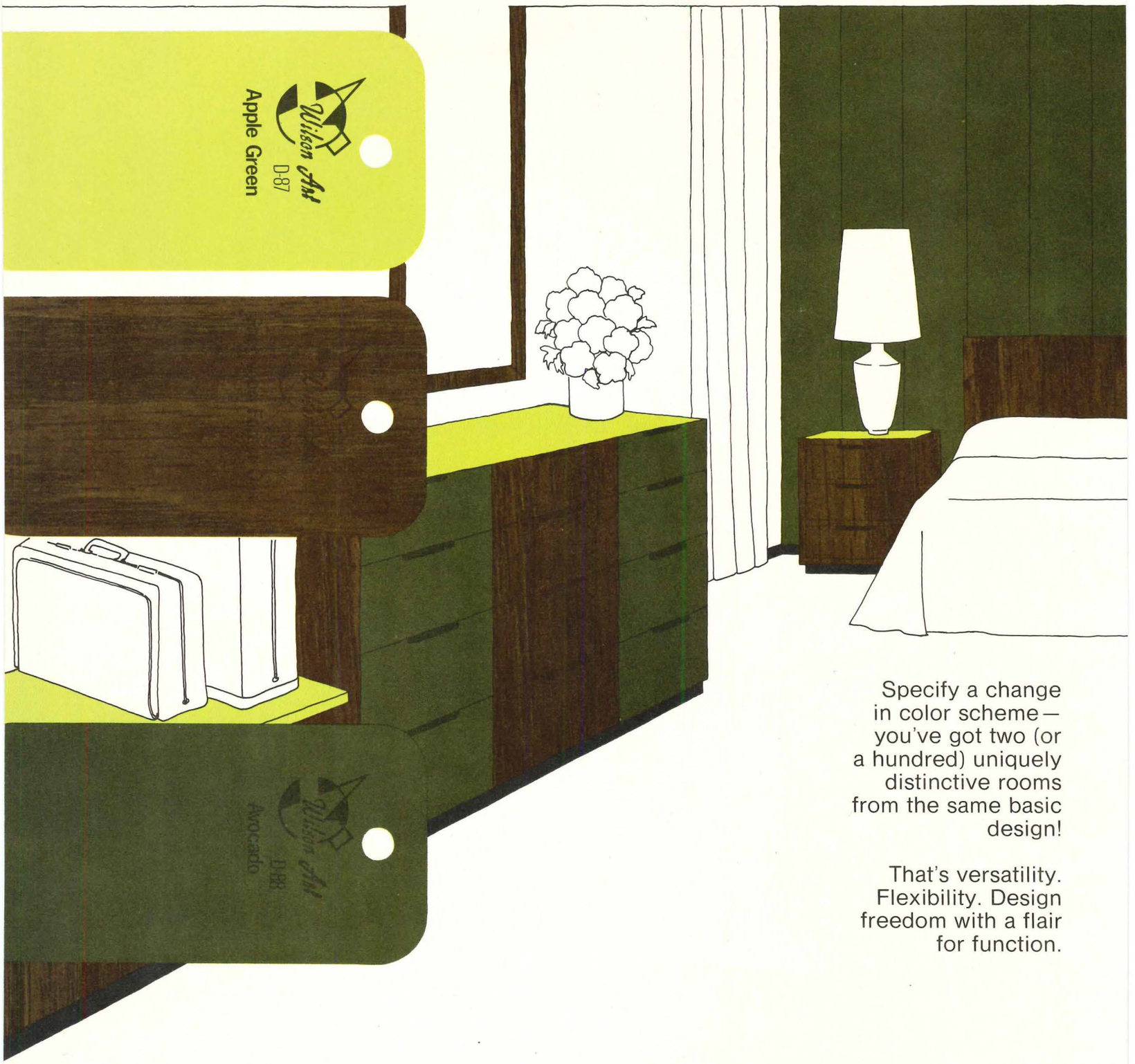
Bally Prefabs can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of urethane foamed-in-place. Easy to add sections to enlarge . . . easy to relocate. Factory refrigeration systems for every temperature from 35° cooling to minus 40° freezing. Stainless steel, patterned aluminum or galvanized finishes. Subject to fast depreciation. (Ask your accountant.) Write for 28-page booklet and urethane wall sample. Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.

There's an evolution in the kitchen

Bally

WRITE DEPT. AR-11

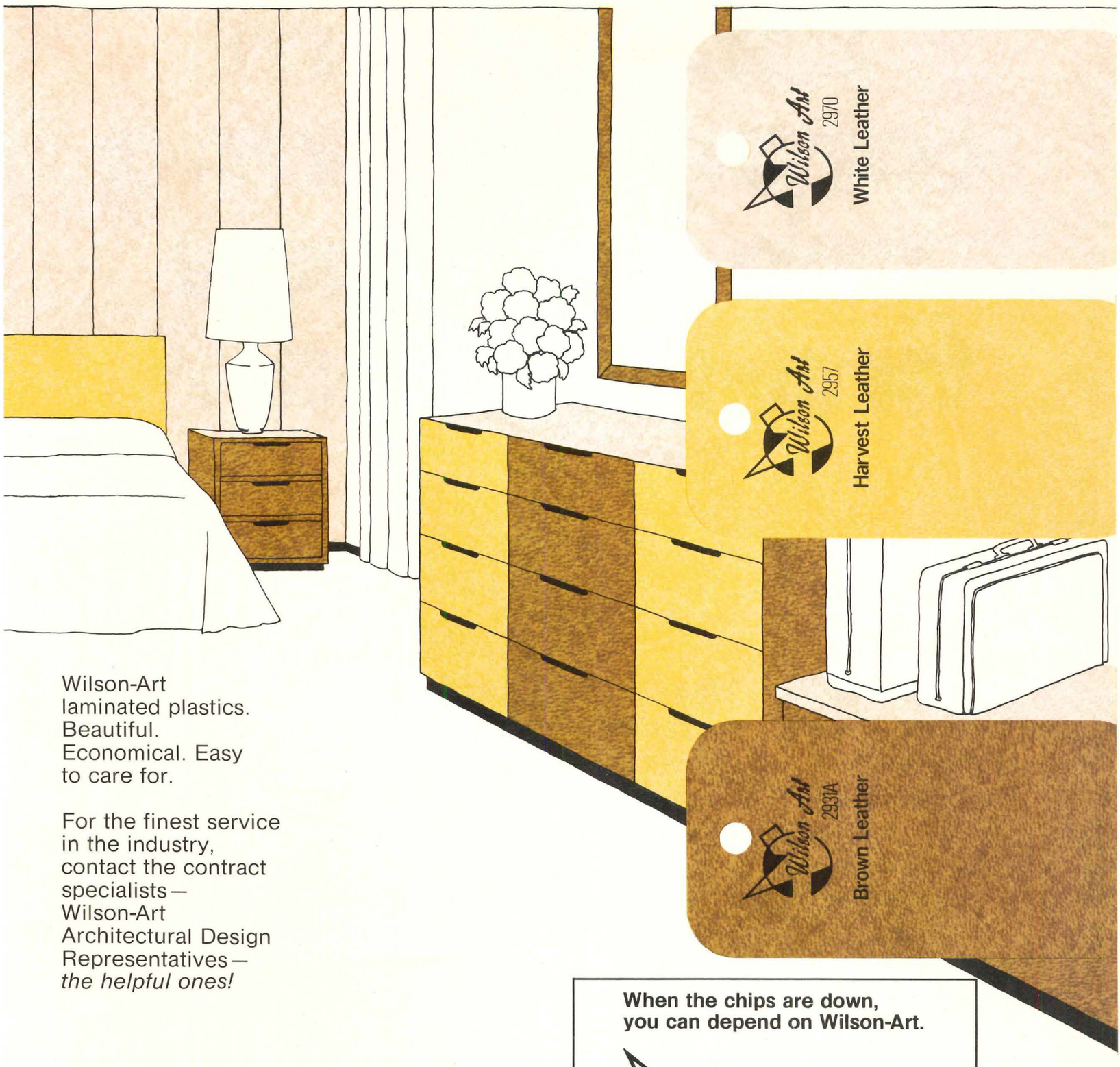
Wilson-Art



Specify a change in color scheme—you've got two (or a hundred) uniquely distinctive rooms from the same basic design!

That's versatility. Flexibility. Design freedom with a flair for function.

the one laminated plastic to specify when you are concerned with the *total* interior.



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For more data, circle 58 on inquiry card

Now latex foam carpet backing can be made fire-retardant

As a leading manufacturer of latex, Goodyear is pleased to join with the Carpet Compounders Council in making this announcement...

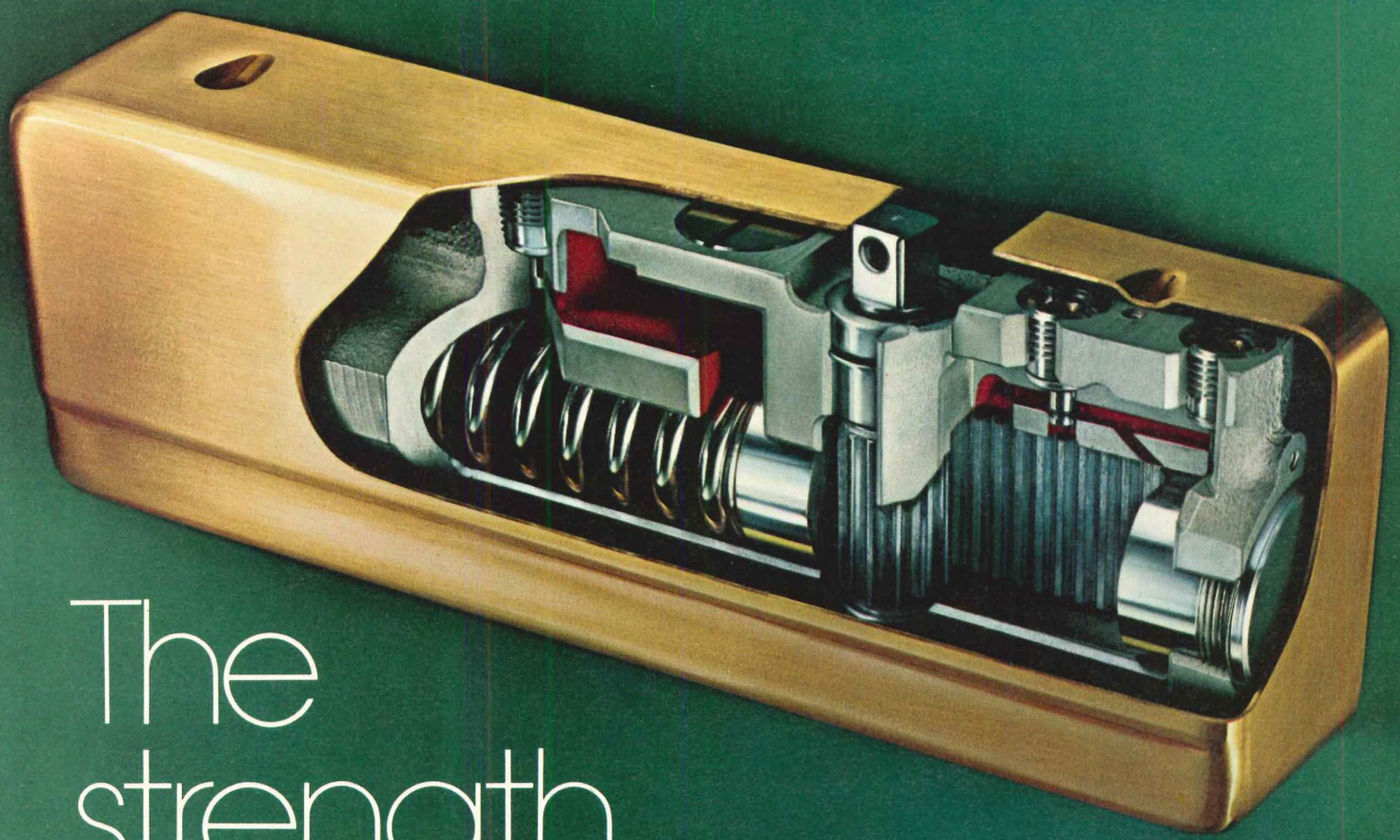
Commercially available high-density latex foam can now pass recognized industry and Government tests for fire retardancy so that it can be combined with the other carpet components designed to meet similar standards.

High-density latex foam which meets the specifications of the Carpet and Rug Institute and the Rubber Manufacturers Association is an ideal carpet backing. It has a soft, cushiony feel. Yet it's durable enough to stand heavy traffic. And it cuts installation time and costs because you don't need a separate backing. An important edge when you're selling carpeting for restaurants, theatres, churches, hospitals, stores and schools.

For more information about new fire-retardant latex foam made with Pliolite, call R. O. Gilruth, Product Manager at (216) 794-4867. Or write Goodyear Chemical Data Center, Dept. K-84, P.O. Box 9115, Akron, Ohio 44305.

GOODYEAR CHEMICALS

For more data, circle 59 on inquiry card



The strength

The style

The range

Door closers.
Look at them as we do.
From the inside,
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combine to easily close
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Clean, smooth lines.
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A door closer for every door,
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For more data, circle 60 on inquiry card

PROFESSIONALS AT WORK

Architects: Skidmore, Owings & Merrill, New York, and Brooks, Barr, Graeber & White, Austin
Mechanical Consultant: Gaynor & Sirmen, Inc., Dallas
Mechanical Contractor: Porter Plumbing & Heating Co., Austin
General Contractor: T. C. Bateson Construction Co., Dallas

This pioneering lighting/ceiling installation in Tacoma is an 11-month wonder.

Barely 11 months from the day Keene's Sechrist Lighting division received preliminary drawings from Skidmore, Owings & Merrill, this remarkable concept in fluorescent downlighting was a reality.

Sechrist had manufactured and delivered the last of 1,889 custom lighting fixtures. Each is a 22-inch cube with an acrylic lens deeply recessed in the housing, and every other one is equipped with a tulamp ballast. All were installed in perfect alignment, their white "U" lamps diffusing a warm glow within a geometric pattern of dark reveals.

How did Sechrist meet a tight deadline with a large order of fixtures no one had ever seen before? By smoothly meshing engineering and production know-how. Sechrist lighting experts worked long and hard with the architectural engineers and electrical contractors to design and fabricate the special fixtures.

In the words of the architect's project manager, "The project required fast action, and Keene was responsive to our needs."

If you create unusual lighting designs, let us show you a brief slide presentation documenting this project. You'll see why you can count on Sechrist's special projects team to execute your ideas successfully—on time and on budget. Call us at (303) 534-0141, or write Keene Corporation, Sechrist Lighting, 4990 Acoma St., Denver, Colo. 80216.

KEENE
CORPORATION

SECHRIST LIGHTING

We've just begun to grow.

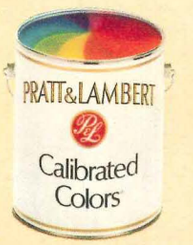
For more data, circle 63 on inquiry card

PHOTOGRAPH: TOM UPPER

Main banking floor of the Bank of Washington Plaza, Tacoma, Washington.
Design concept developed by Skidmore, Owings & Merrill, Architects, Engineers, Portland, Oregon.
General Contractor: Donald N. Drake Co., Portland, Oregon.
Electrical Contractor: Carl T. Madsen, Inc., Tacoma, Washington.

To Paint or not To Paint.

The beauty in shapes and textures is undeniable. But a life without the full expression of color is not life. Color infinitum. Paint is the one medium that offers the individual in his environment the choice of nature's completed spectrum. With all its subtleties. With all its explosiveness. It is the only medium that encourages the total exploration of color. Paint is freedom. Let paint be part of your creative decision. And when it is, let it be the finest. Pratt and Lambert. The paint.



PRATT & LAMBERT
BOX TWENTY-TWO / BUFFALO, N.Y. 14240

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Who keeps your building high and dry when it's six floors underground?

Philip Carey.

With today's buildings going deeper and deeper underground, it's more important than ever to provide effective waterproofing and dampproofing protection.

And more difficult.

That's why Philip Carey has engineered waterproofing and dampproofing systems that assure you *maximum* protection against moisture penetration. And, only Philip Carey offers a combination of products — primers, adhesives, asbestos felts, glass and fabric membranes, and protection courses — that make the systems work.

Because conditions vary with job sites and structures, the problems are not always the same. So it's important to discuss your requirements with us — during the planning stage.

One of our Architectural Relations Managers is ready to assist you in determining the best system for your building, wherever you plan to put it. See our catalog in Sweet's Architectural File—7.9/Ca. Or return the coupon and it's yours. Philip Carey Company, Division of Panacon Corporation, Cincinnati, Ohio 45215.

For more data, circle 65 on inquiry card

☐ Please send me your Waterproofing/ Dampproofing catalog.
☐ Have an Architectural Relations Manager contact me.

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Galbestos walls: the natural choice

Galbestos® is color.
Galbestos is texture.
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Galbestos is versatility.
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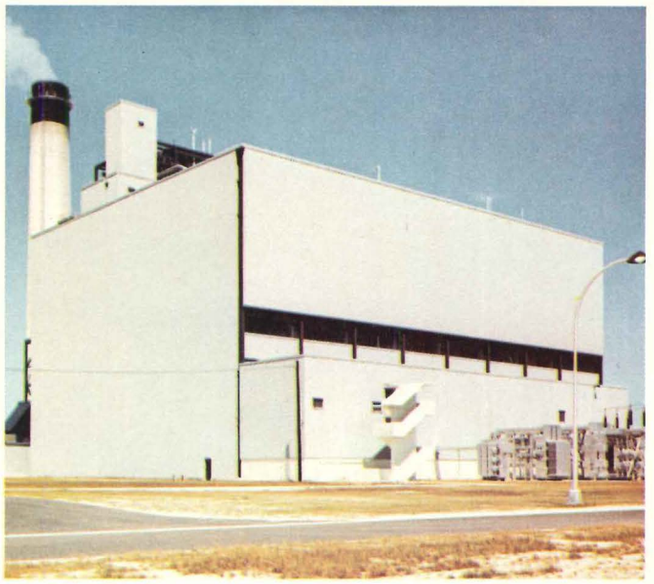
In all the world, there is no wall and roof material comparable to Robertson Galbestos. Like natural materials, the textured surface of this protected metal breaks up the sun's rays to prevent glare and enrich its color. Your power plant looks better in the beginning, and it **stays** that way because of the Galbestos protective system.

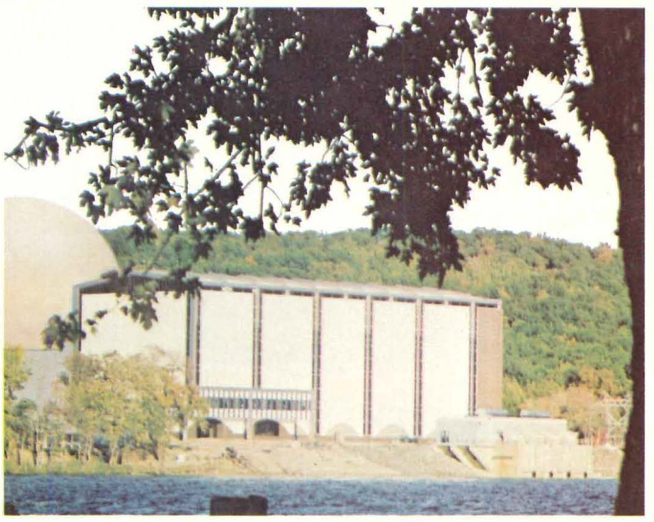
In a short time, sun, pollutants, dirt, rain and wind-blown abrasives can ruin ordinary building finishes. Not Galbestos. Famous for decades for its resistance to wear and weather, it has now been improved even further by a new polymeric finish. This multi-layered protection system—fifteen times thicker than a paint finish—has scored such high marks in grueling independent tests that we now offer a unique performance specification challenge.*

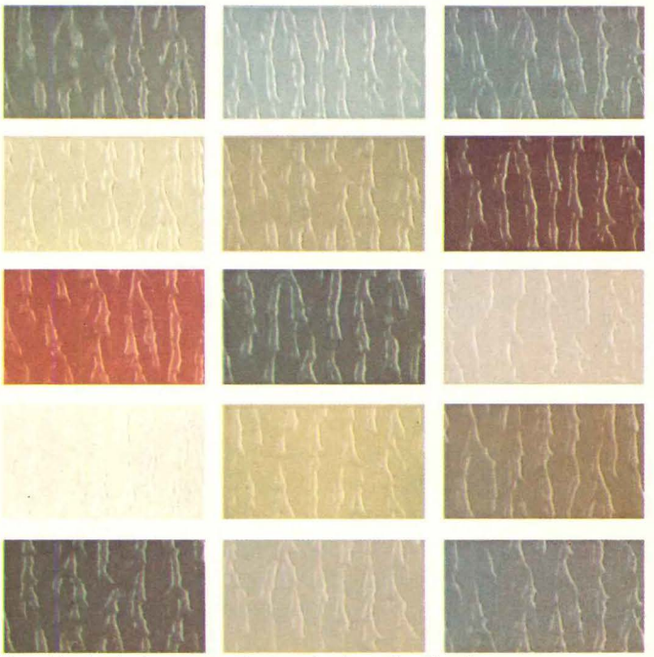
Galbestos is available in a variety of profiles and natural colors, beautifully compatible with other building materials. It can lend new permanence and distinction to your installations.

Galbestos is representative of Robertson's overall contribution to building construction excellence. For more than 60 years, Robertson has been active in designing, producing and installing metal walls, roofs and floors and engineered ventilation systems for power installations . . . all over the world.

*For independent test reports and specification information, see your Robertson representative, or write H. H. Robertson Co., Room 1111, Two Gateway Center, Pittsburgh, Pa. 15222







Top: Northside Generating Station, Jacksonville, Florida
Center: Connecticut Yankee Atomic Power Co., Haddam Neck, Connecticut
The colors are reproduced here for illustration only

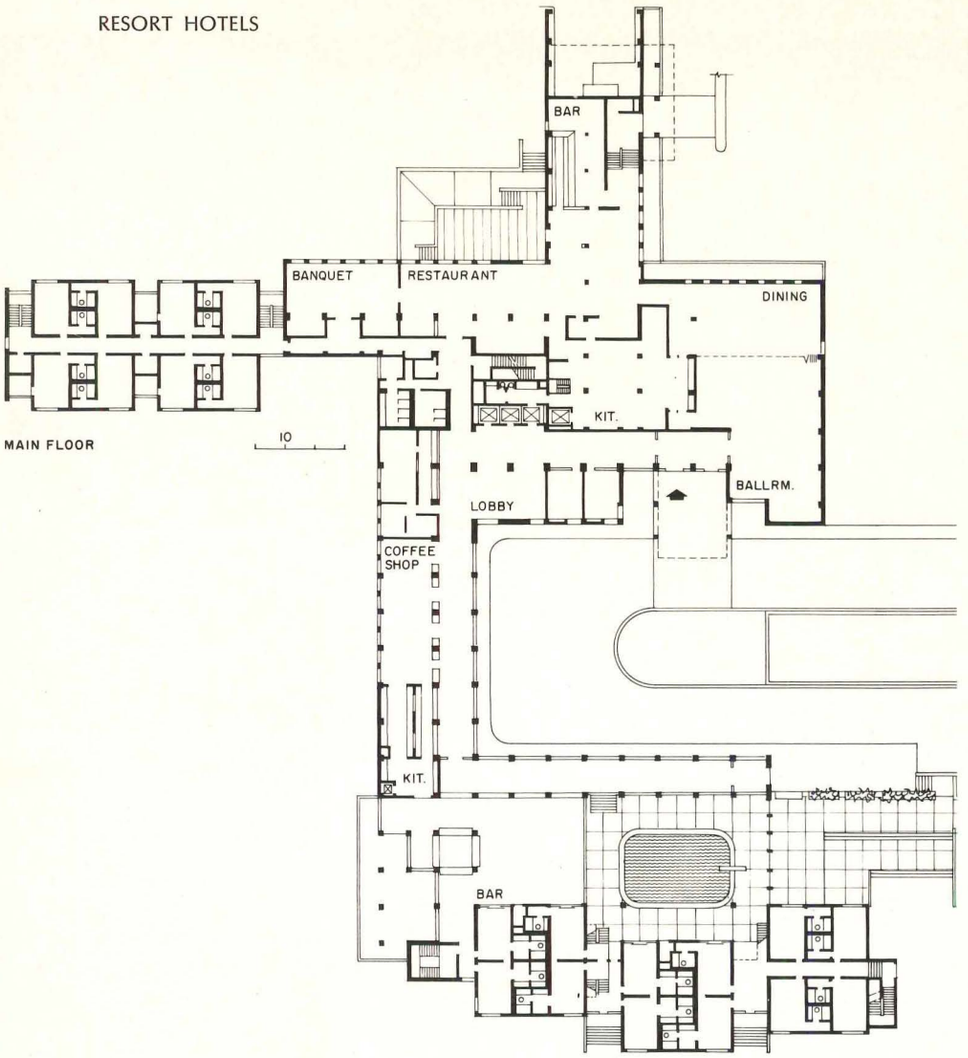
ROBERTSON

For more data, circle 66 on inquiry card

RESORT HOTELS AND CONDOMINIUMS DESIGNED FOR ROMANTICS IN SEARCH OF JUST THE RIGHT AMBIANCE

The four projects included in this study have a single common thread. Each has been designed to celebrate its environment and the sports of that environment in a direct, expressive way, and each succeeds in doing so. All have been created by architects who may or may not like to watch yacht races or sail in Narragansett Bay, or swim and snorkel in the Caribbean, or ski in the French Alps. What is important is that they possess the sensitivity and imagination to perform the fascinating task of creating the right ambiance for those who do.—*Mildred F. Schmertz*

BUILDING TYPES STUDY 428

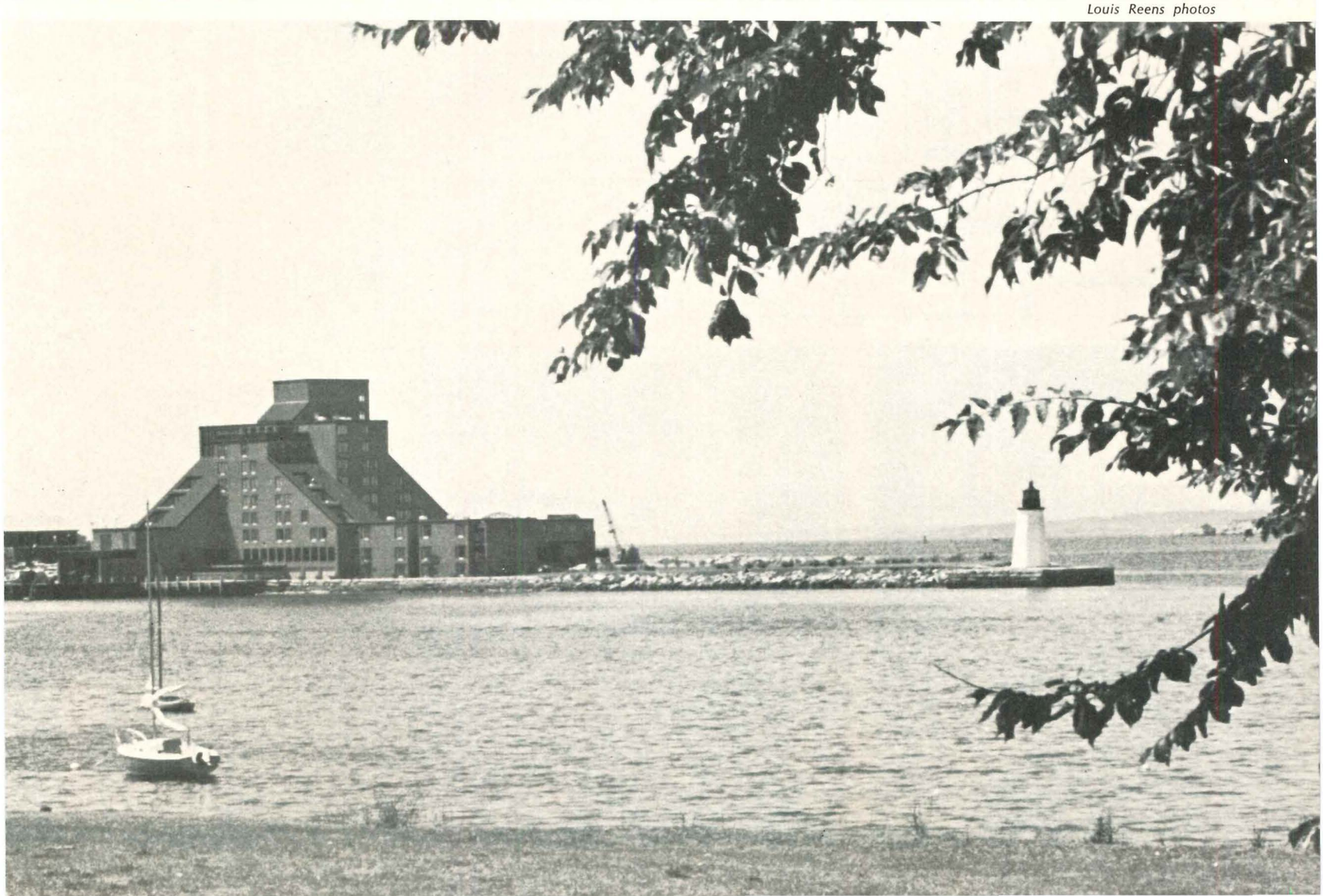


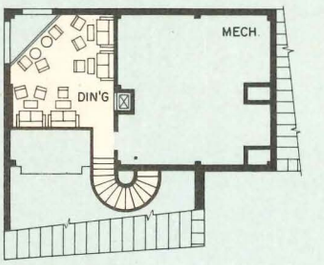
ACROSS THE WATER THIS SHARPLY ANGLED SILHOUETTE LOOKS BETTER THAN A BOX

This year-round inn on Goat Island in Narragansett Bay is visible from Newport R.I., the great harbor, and the route over the Bay by way of a recently constructed bridge. The clients began by wanting a typical squared-off functional box in the tradition of chain hotels everywhere. The architects persuaded them that the visual prominence of the site was one of its greatest assets and that the hotel should have a form and shape to make the passing traveler wonder what it is. The result is a work of sculpture to be viewed from all angles. Its steeply pitched roofs are inspired by local shingle-style houses.

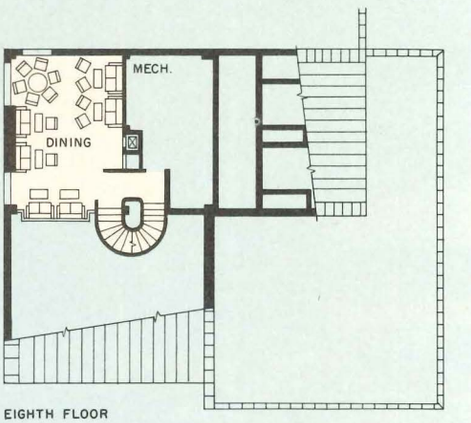
SHERATON-ISLANDER INN, Goat Island, Newport, R.I. Owner: *Island Development Corporation.* Architects: *Warner Burns Toan Lunde;* mechanical and electrical engineers: *Francis Associates;* general contractor: *F. L. Collins & Son, Inc.*

Louis Reens photos

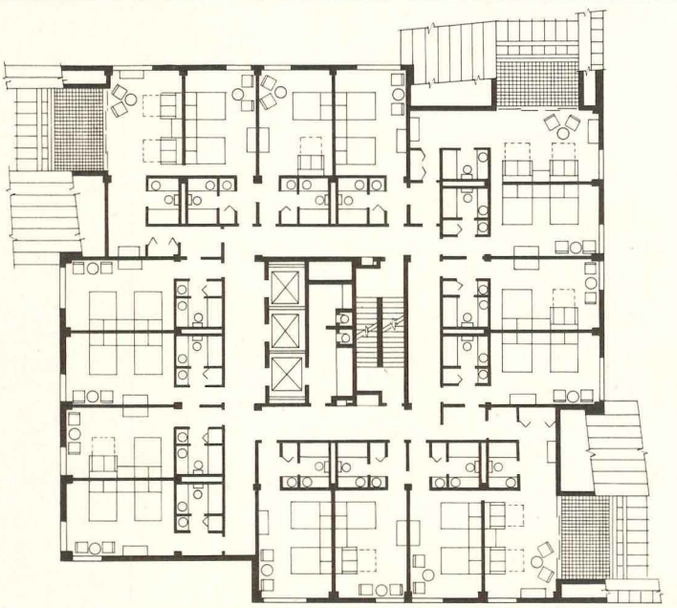




NINTH FLOOR



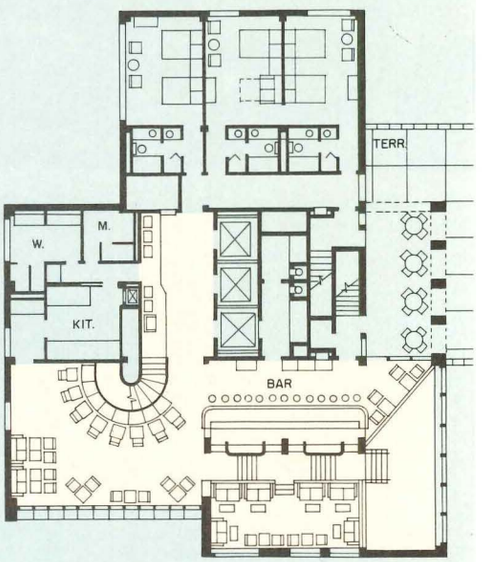
EIGHTH FLOOR



FOURTH FLOOR

5

Shown above is the 10-story inn's glass-enclosed swimming pool and at left the typical arrangement of rooms around the central elevator and stairway core. The most interesting feature of the hotel is its five-level cocktail lounge at the top of the building surrounding the elevator penthouse. Because this lounge is high, multi-level, and shallow, it offers a lighthouse-like viewing perimeter for those who like to look out over Narragansett Bay. The owners say that the lounge does an excellent business, especially during sailing race weeks. Four of the five levels and how they interconnect are shown at the right.



SEVENTH FLOOR

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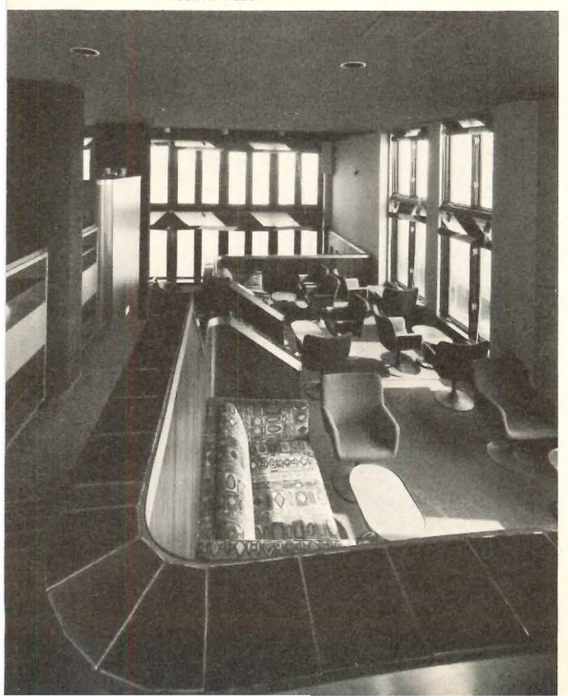
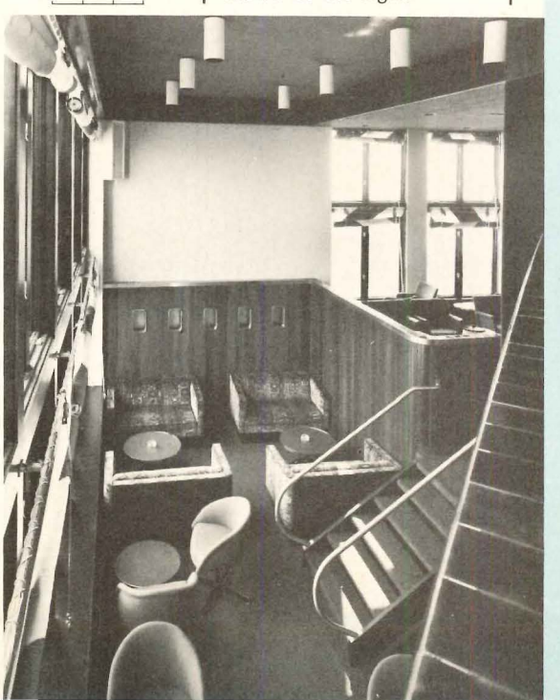
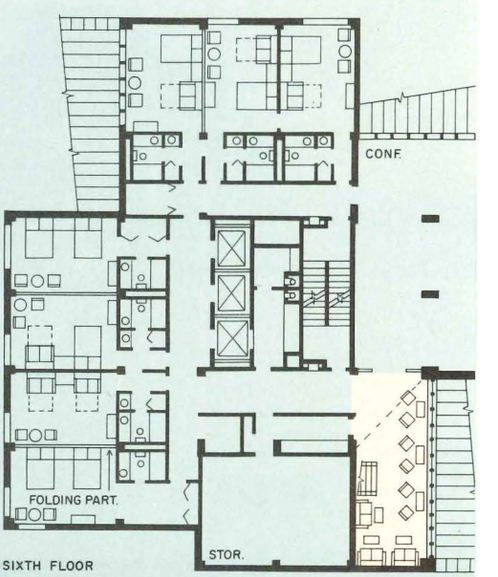
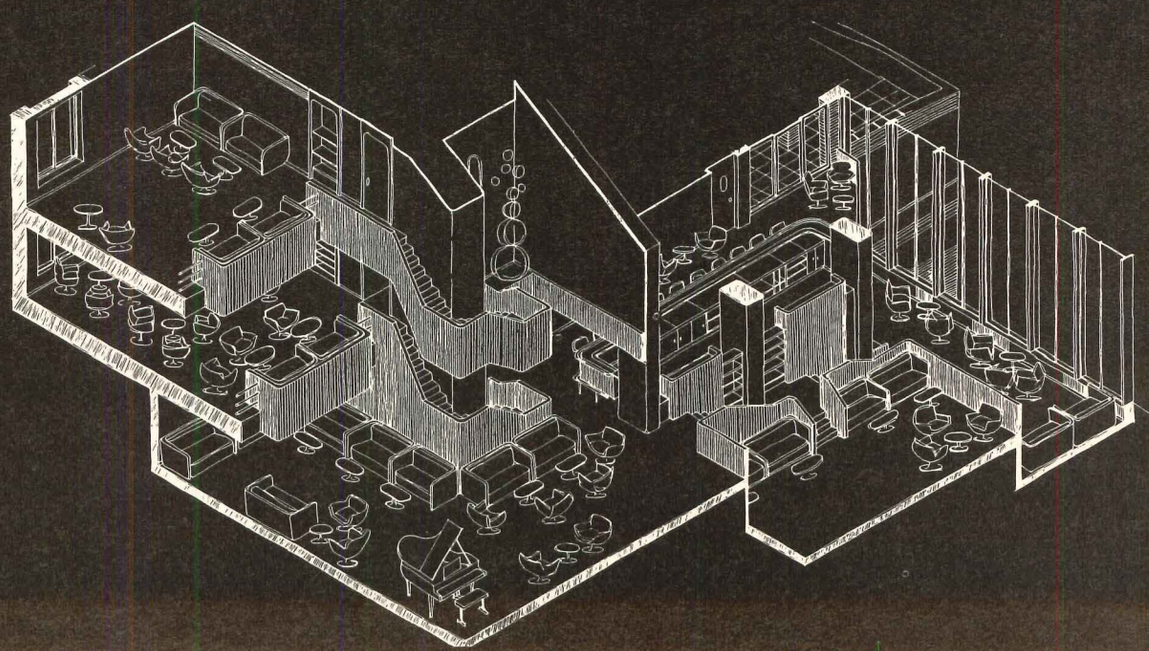


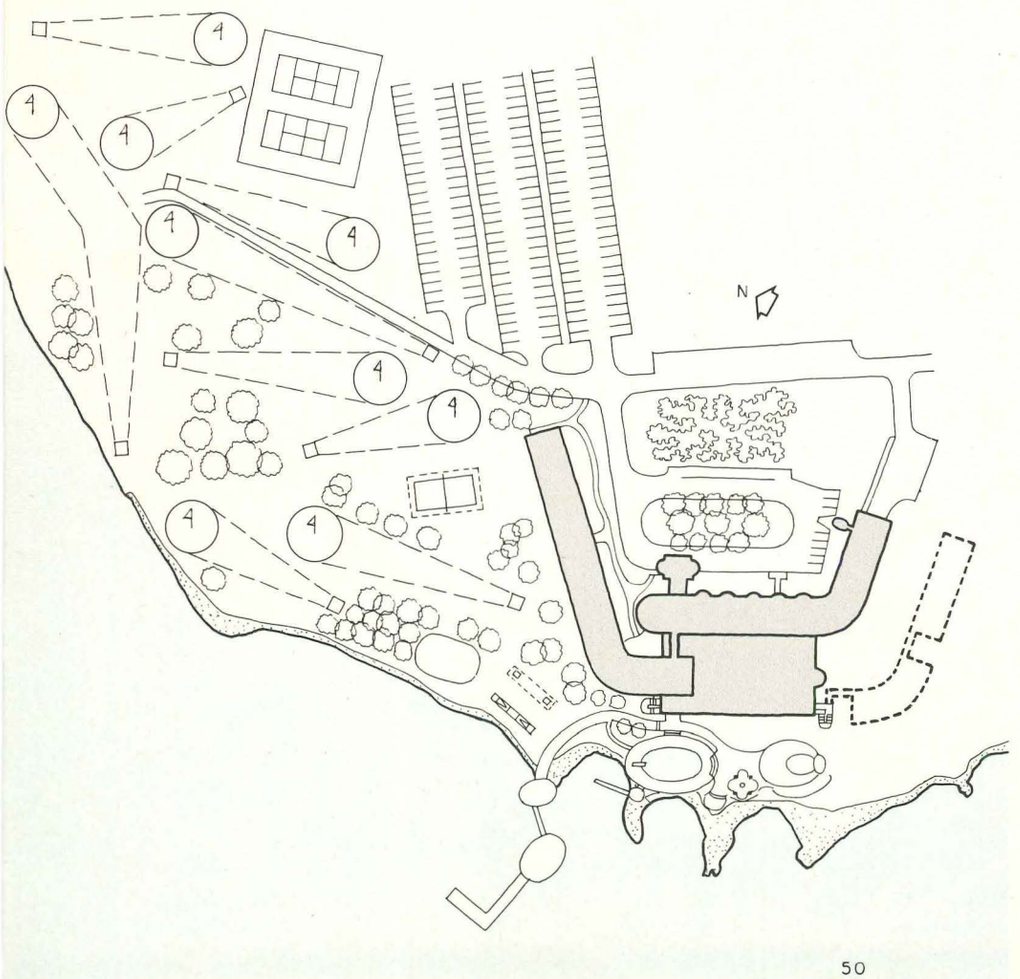




SIXTH FLOOR

The isometric (right) indicates that the cocktail lounge resembles the interior of a ship and people move through it by climbing steps as they would on a ship's bridge. The wood finishes, railings and light fixtures mildly suggest a nautical ambiance as can be seen in the photo above.





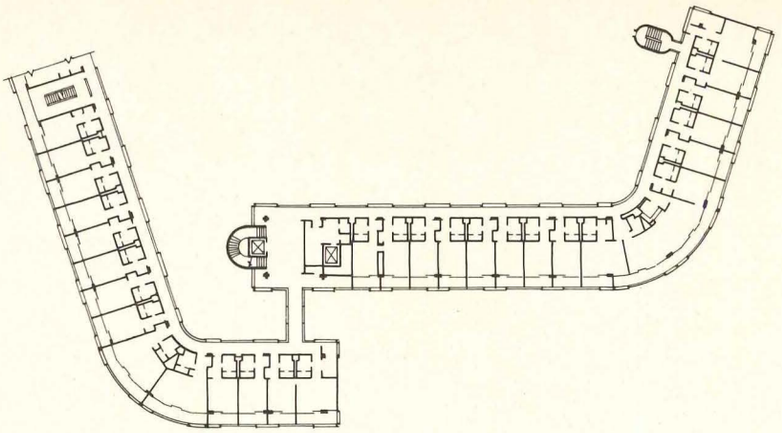
A GOOD SITE PLAN MAKES A ROCKY COAST JUST RIGHT FOR SWIMMERS

Most hotel developers about to construct a large international facility on a cliff site such as this Hilton for Martinque, would first blast the rocks to create a sandy beach. After thus violating the site, they would build what they considered a spectacular and luxurious edifice—possibly staggered down what remained of the rocks—in the hope that the tourists would share their tastes. Happily this hotel, which is quite modest in its architectural expression, maintains the continuity of the land form.

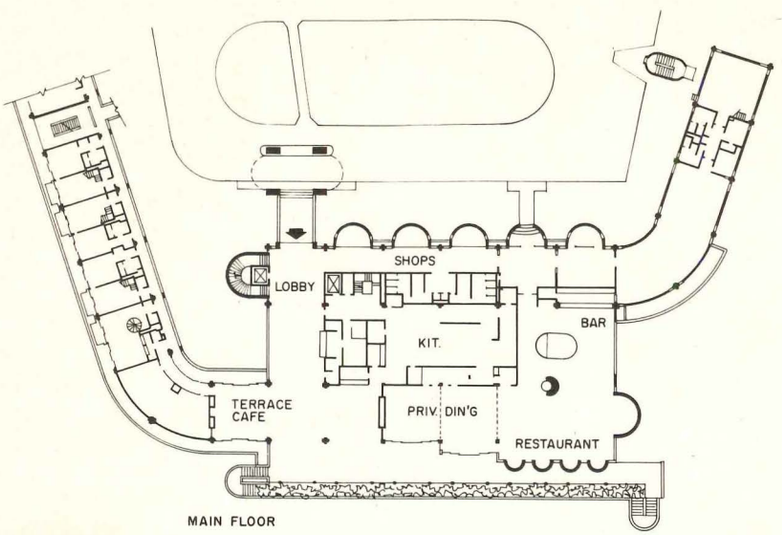
MARTINIQUE HILTON, "Le Bateliere," Schoelcher, Martinique, F.W.I. Owner: *Societe-Hoteliere et Touristique Martiniquaise.* Architect: *Charles Rameau;* consulting architects: *Warner Burns Toan Lunde;* structural engineers: *Severud-Perrone-Fischer-Sturm-Conlin-Bandel;* mechanical engineers: *Jaros Baum & Bolles;* lighting consultants: *Wheel-Garon, Inc.;* interiors: *WBTL-Jacques Dunham;* general contractor; *Janin Co.*

As the air view and site plan indicate, the ocean side of the hotel is a beautifully planned series of spaces which include a pool jutting out over the rocks, terraces, a gazebo and steps leading down to the water. At the water level are a series of bridges and oval platforms which the architects call pods, which connect with a marina. The pods are for swimming, snorkeling and sun bathing. The two wings of the building surround a group of royal palms, the center of the courtyard of the original estate. A small golf course has been planned within the estate's botanical garden. Wherever possible plant materials, rocks and water remain as the developers found them.

Louis Reens photos

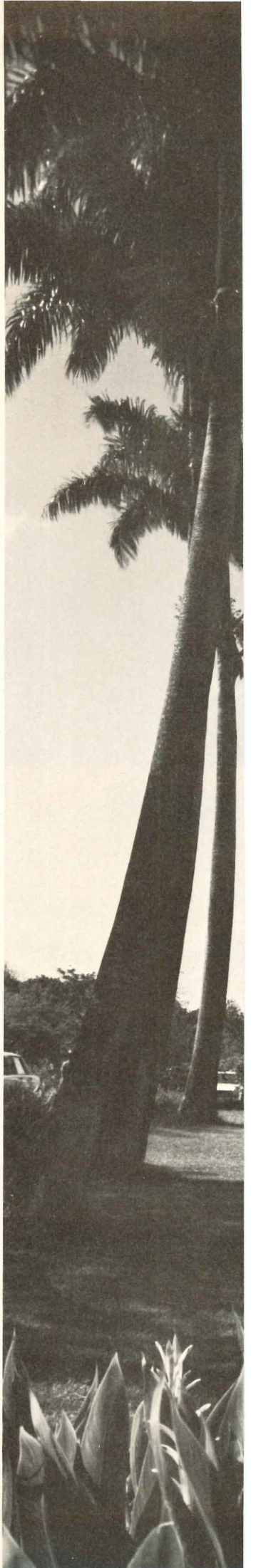


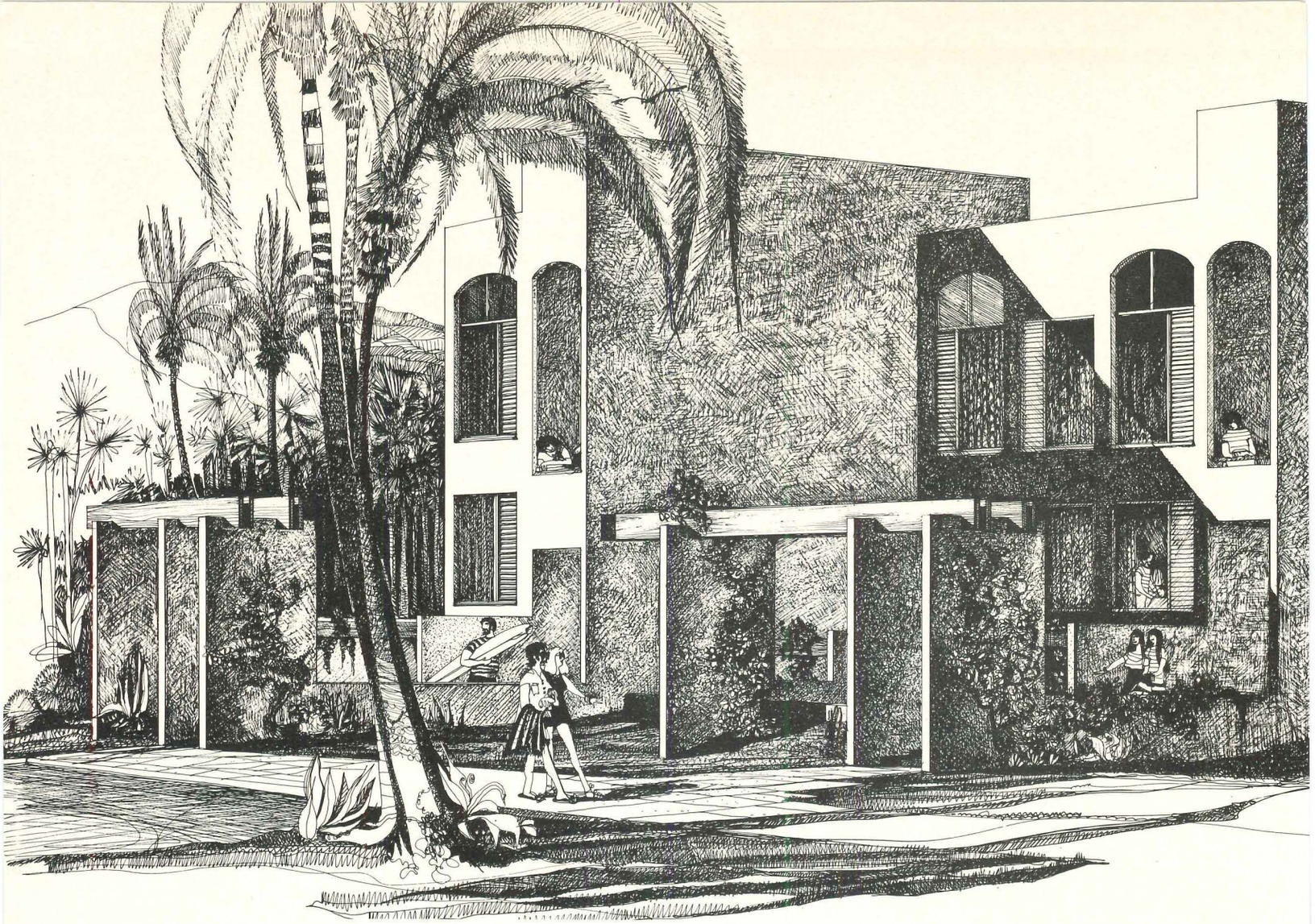
TYPICAL FLOOR

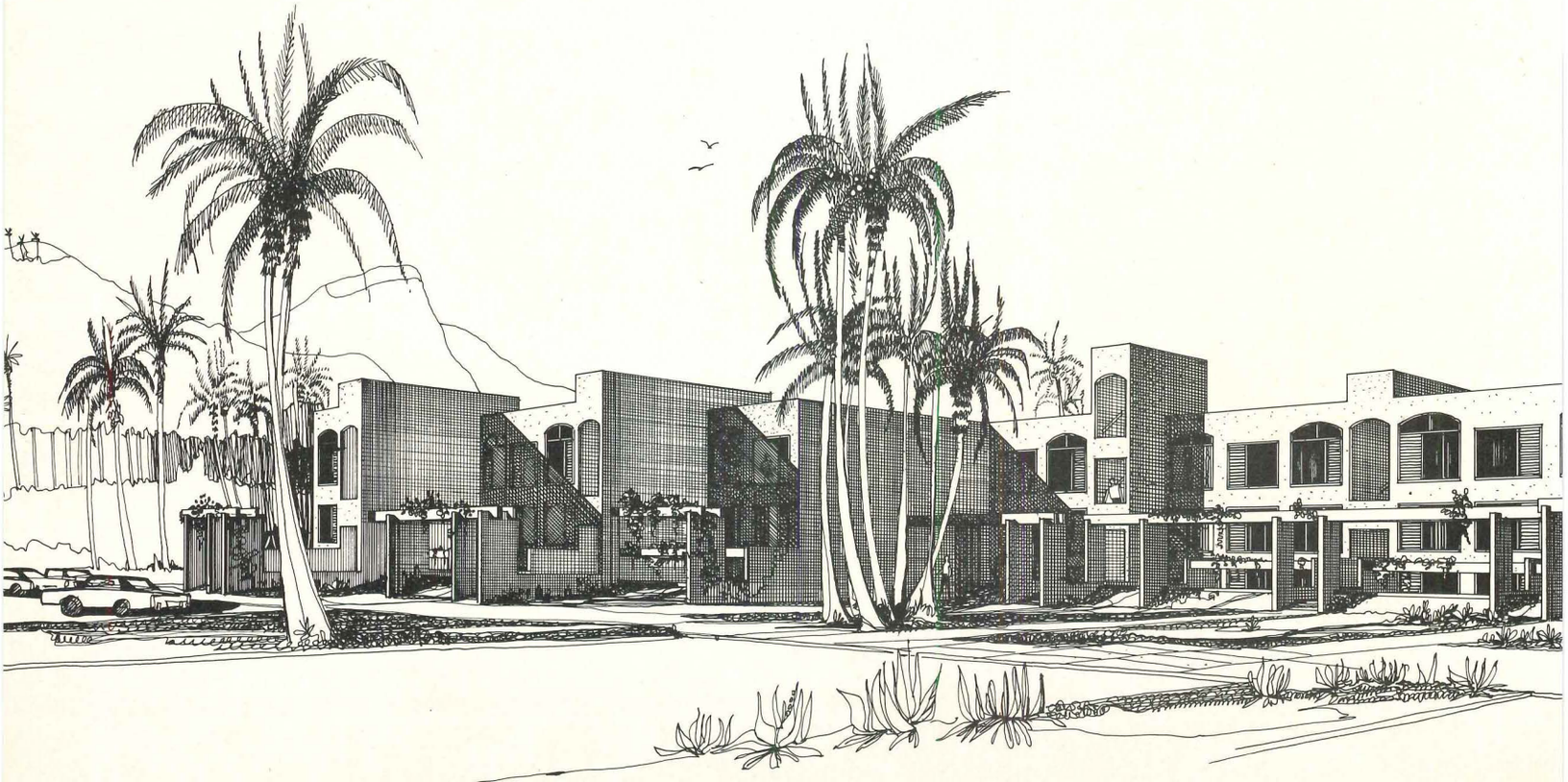


MAIN FLOOR

The royal palms and driveway from the original estate are shown at the right. Adjacent to the entrance as the ground floor plan indicates are a series of shops enclosed within half circles. The dining terrace below overlooks the swimming pool and the ocean. As can be seen in the plan of a typical hotel room floor, all rooms are reached by a single-loaded corridor and have seaside terraces.



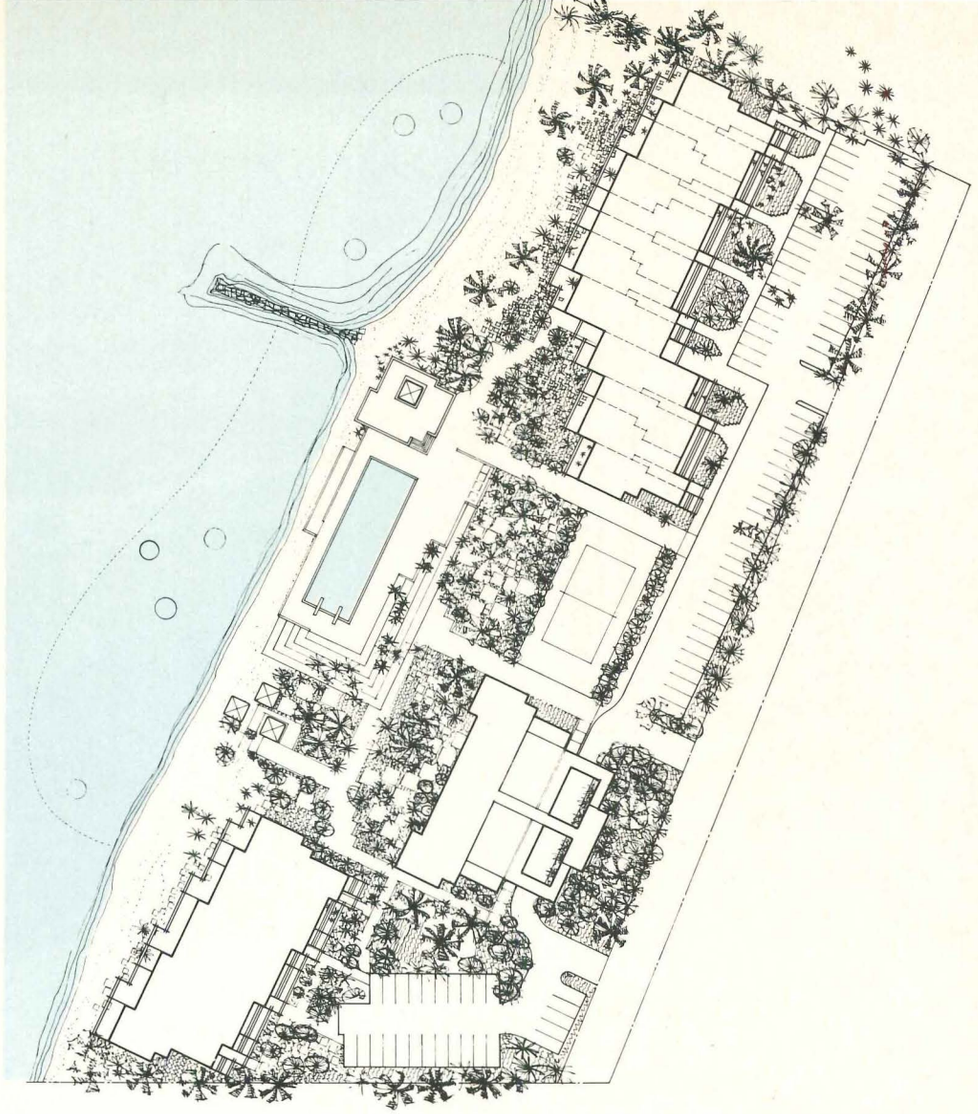


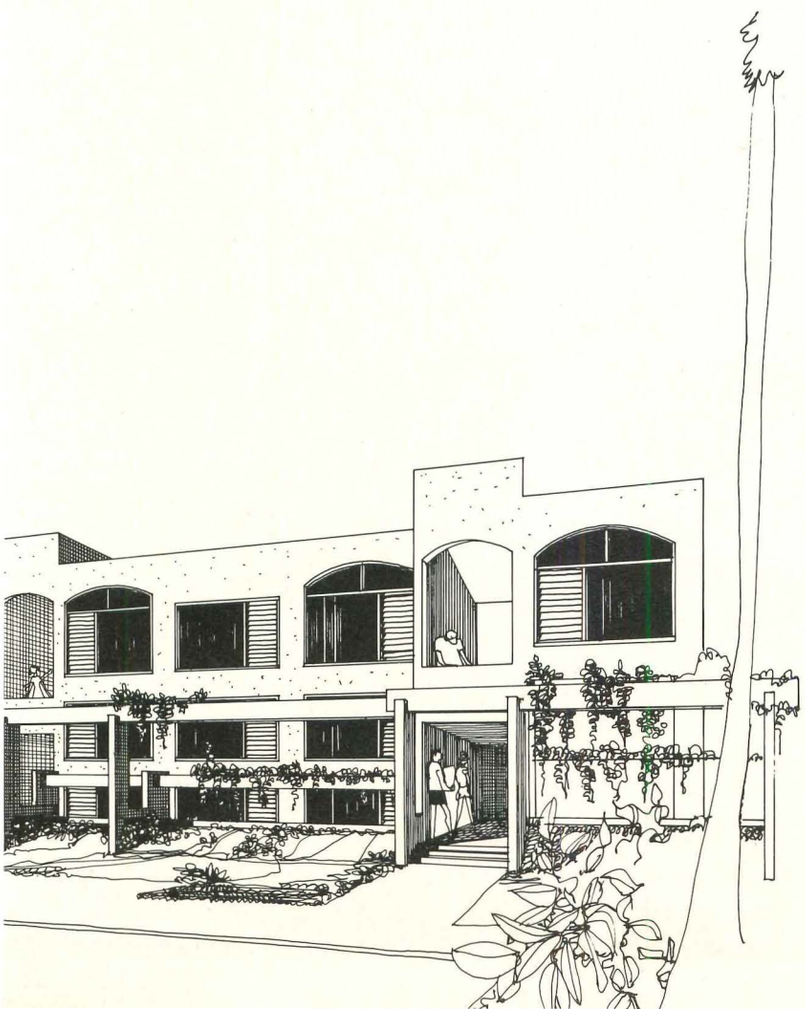


A FUTURE HOTEL-MOTEL CONDOMINIUM CAN START SMALL WITH A GOOD DESIGN

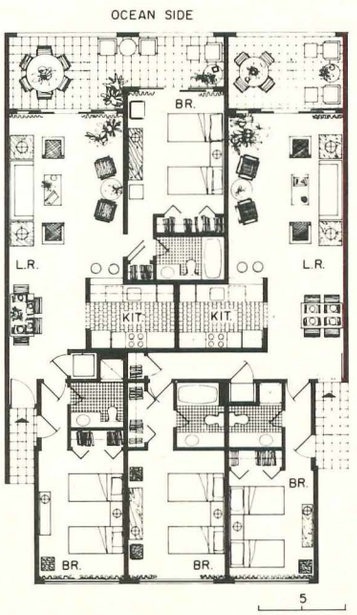
In many resort areas developers with only a small amount of capital begin by constructing condominiums first and selling them to raise more capital to construct the basic hotel-motel-facilities. The plot plan (right) shows a projected development in St. Croix which will include 36 condominium units now under construction in the first-phase building. Next to be constructed will be a multi-story hotel with the usual tourist facilities as well as pool and terrace. The addition of another 24 condominium units will complete the development.

GRANADA DEL MAR, St. Croix, U.S.V.I. Owner: *American Antilles Development Corp.* Architects: *Robert L. Rotner, project architect Dennis P. McGrath;* structural engineers: *Alvin Fisher-Robert Redlein;* mechanical engineer: *Robert C. Dukes;* construction consultants: *Concrete Detailing Services, Inc.*





The building, a simple poured concrete and concrete-block structure, has been given variety and interest and brought into scale with the local village architecture by means of open stairways and broad trellises on the entrance side. The well-thought-out layout of the condominiums, shown in the plan below, permits the owner to conveniently and comfortably occupy all of his unit, or just the living and master bedroom, or only the second bedroom, if he chooses to rent out the remaining space.

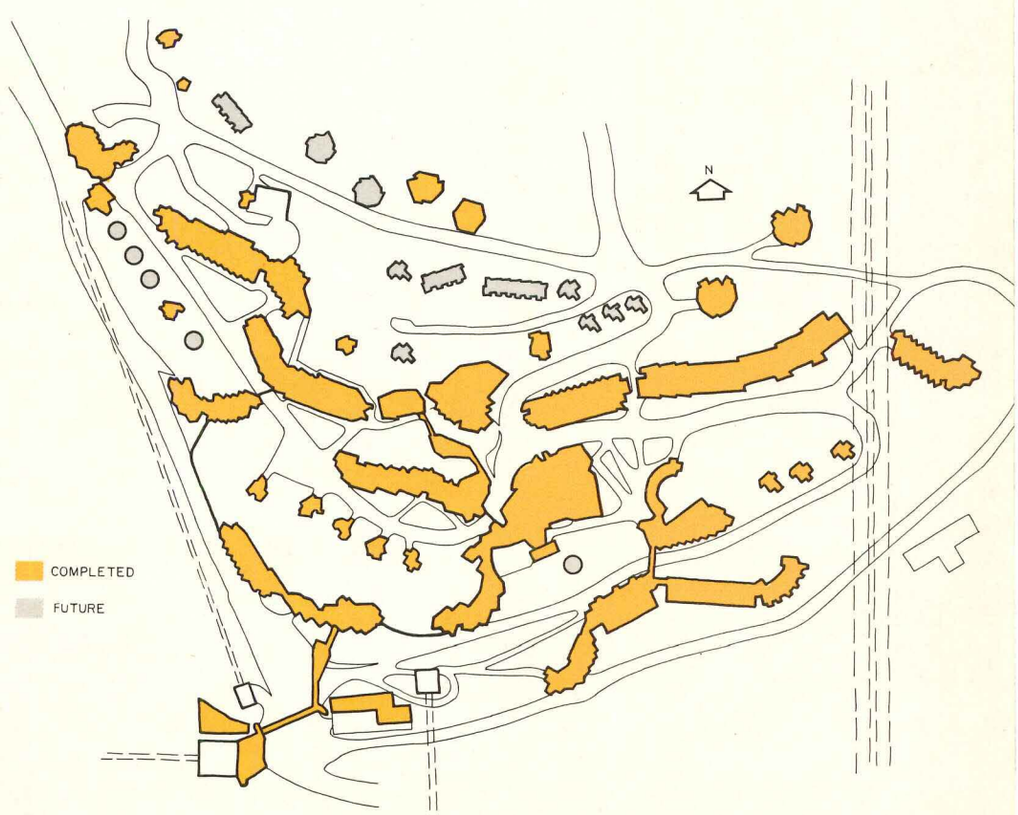


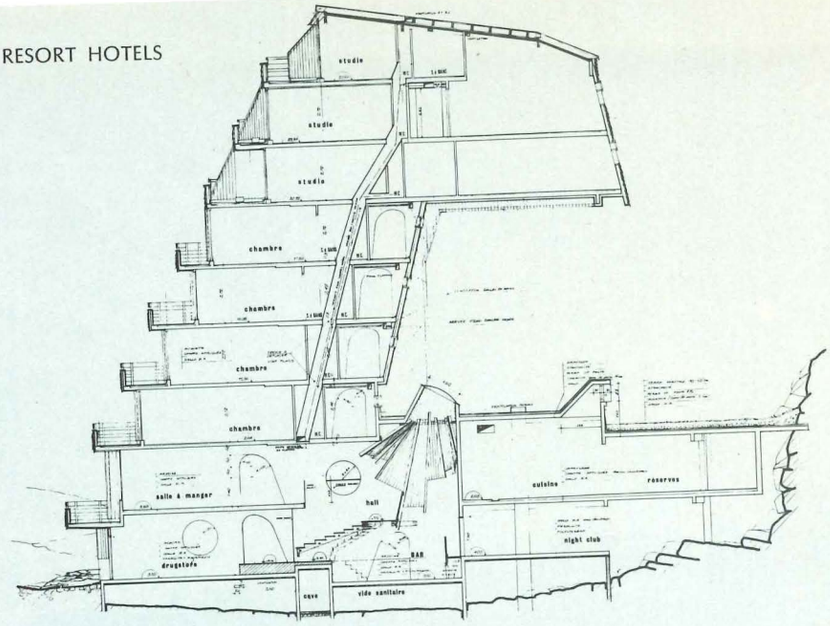
Photos opposite and above by Lee English Biel

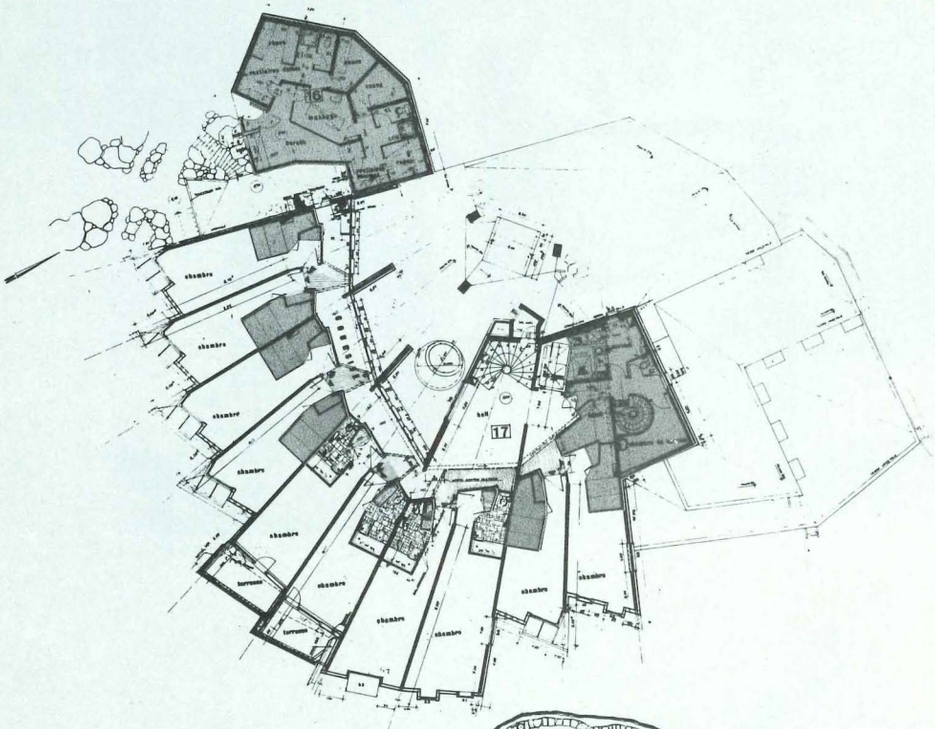
A NEW SKI VILLAGE IN THE FRENCH ALPS DESIGNED TO LOOK AS IF IT GREW THERE

This marvelous place is one of the few works of modern town planning which appears to be truly a part of its physical environment. Granted of course that the environment itself is spectacular and that the resort is a happy community of skiers, the successful ambiance of this village is chiefly the result of an unsurpassed architectural performance. Everywhere the profiles of the buildings echo the nearby rock formations or the fir trees. The silhouettes of the large groupings follow or are juxtaposed against the forms of the mountains. The forms are witty and capricious, but they function quite well and have an overall unity through consistency in structure and materials.

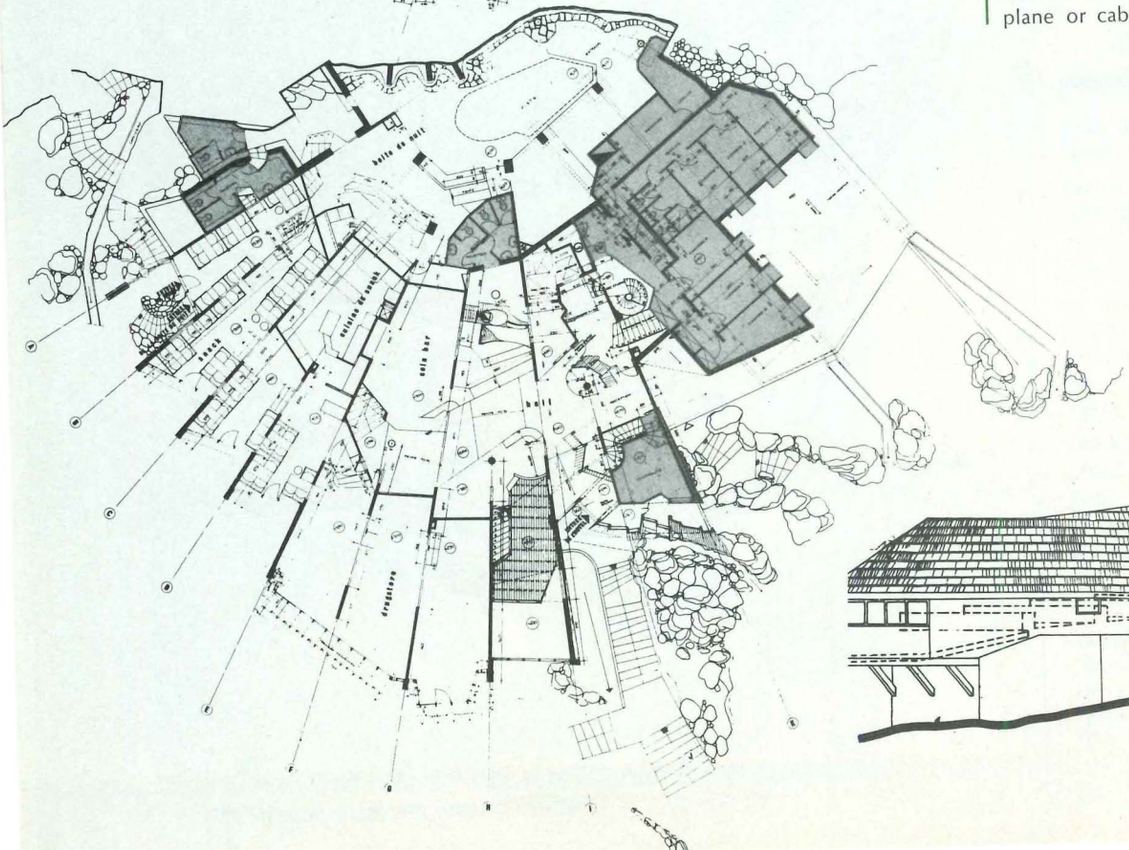
SKI RESORT, Avoriaz, France. Architects: *Atelier d'Architecture — administrators: Jacques Labro. Jean-Jacques Orzoni: architects: J. Hatala, P. Lombard, G. Rado-Orzoni, A. Wujeck: collaborators: P. Bahus, J. L. Brahem, Ngo Manh Duc, A. Lardière.*

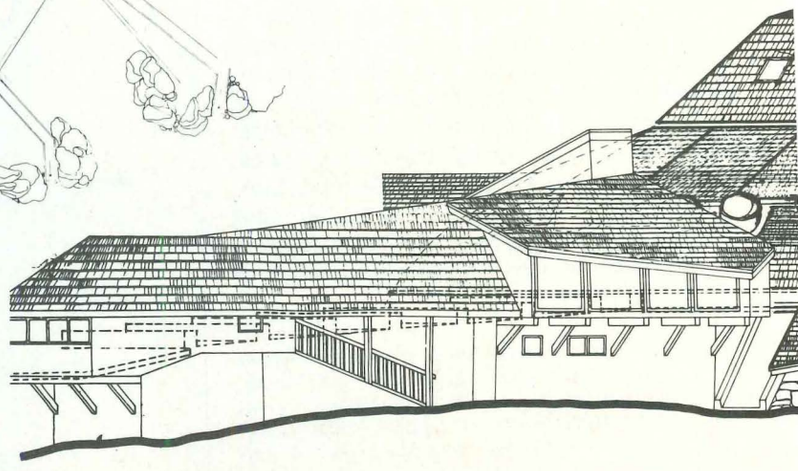


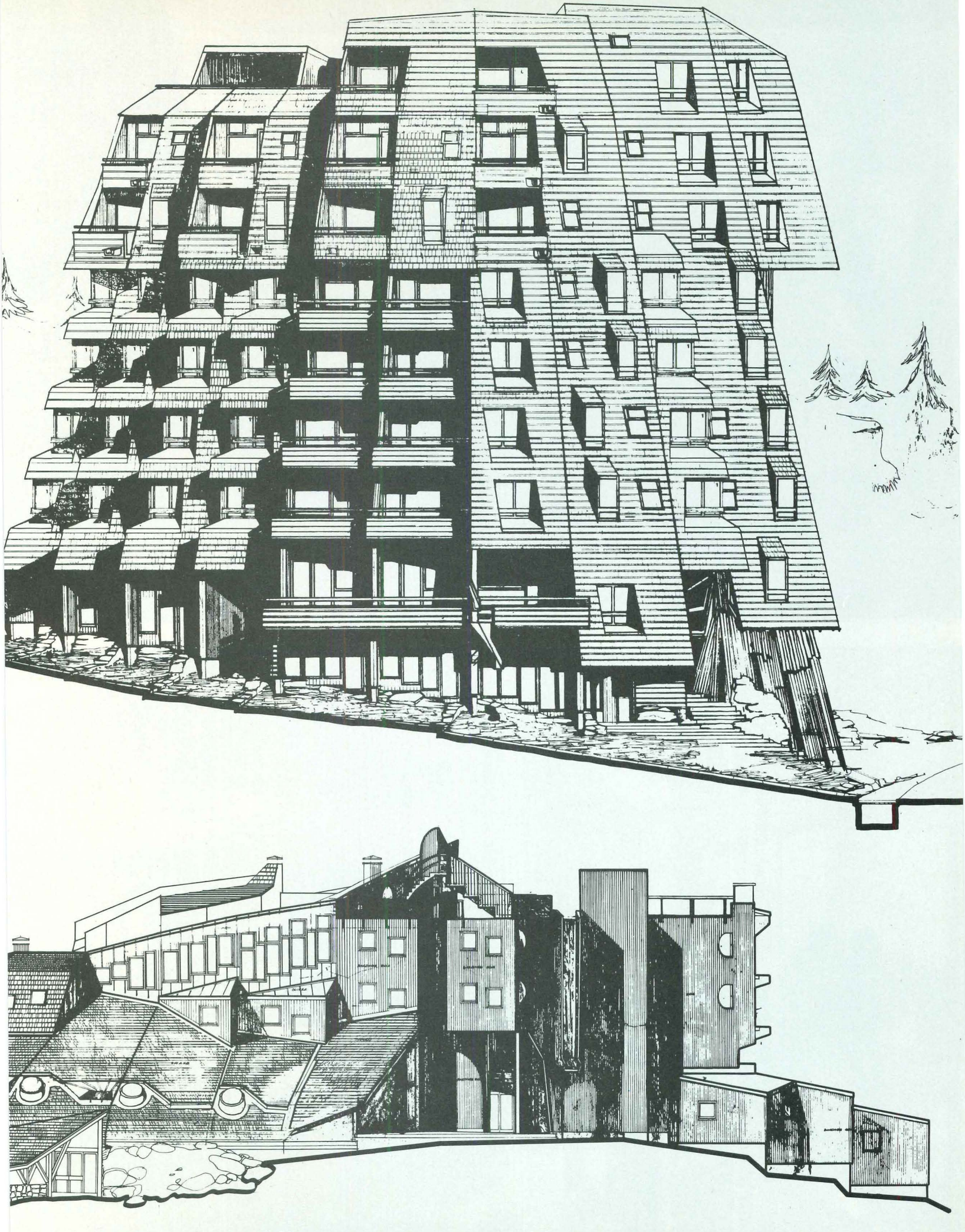




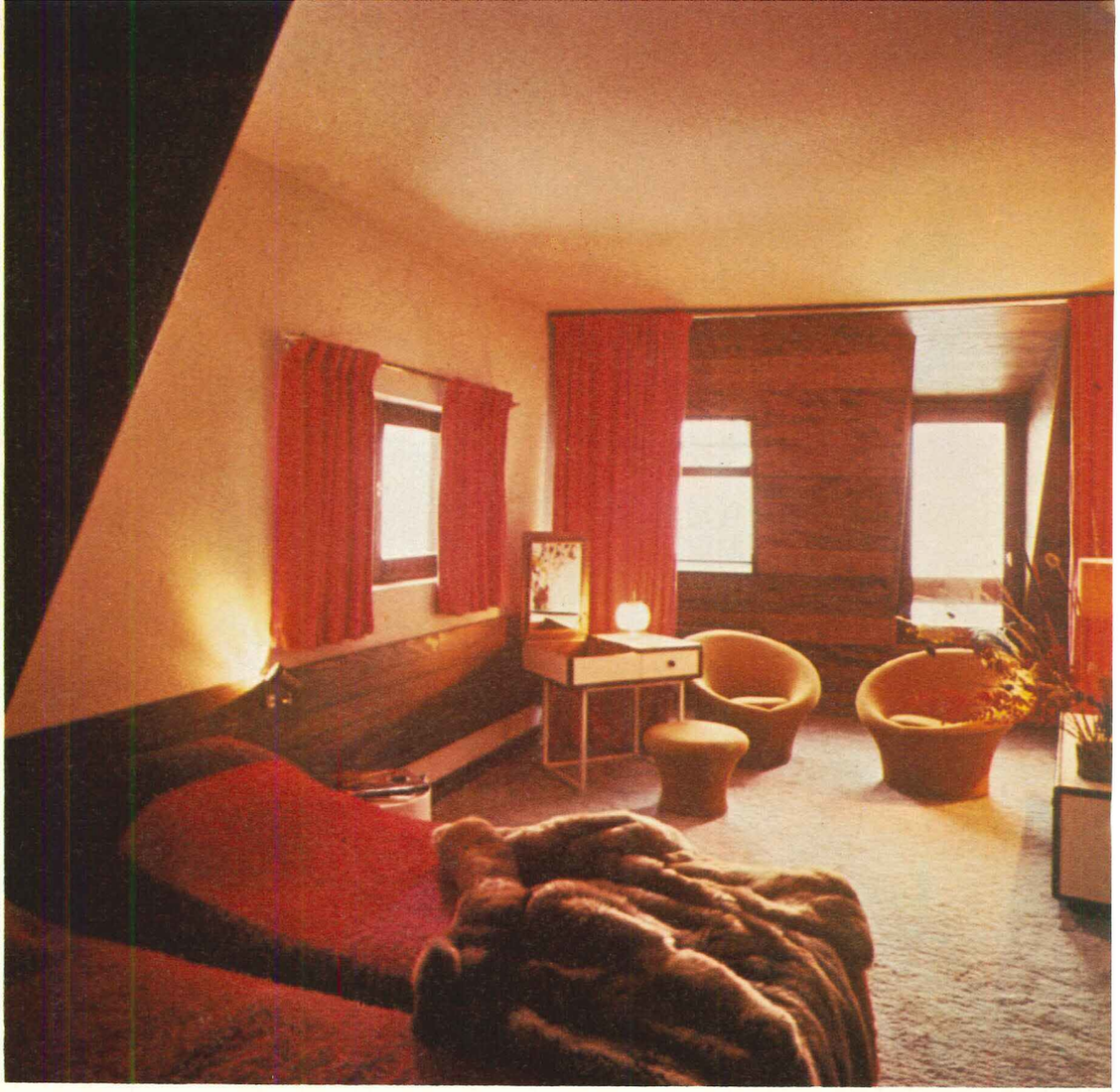
The structure shown in the plans (left) and in the drawings (opposite and below) and on the cover is the *Hotel des Dromonts*. Its neogothic character is typical of all the hotels and condominiums in the village. Avoriaz will ultimately accommodate 15,000 people in hotels, condominiums, individual chalets, and hostels. Automobiles are parked at the base of the mountain and skiers reach Avoriaz by plane or cable car.

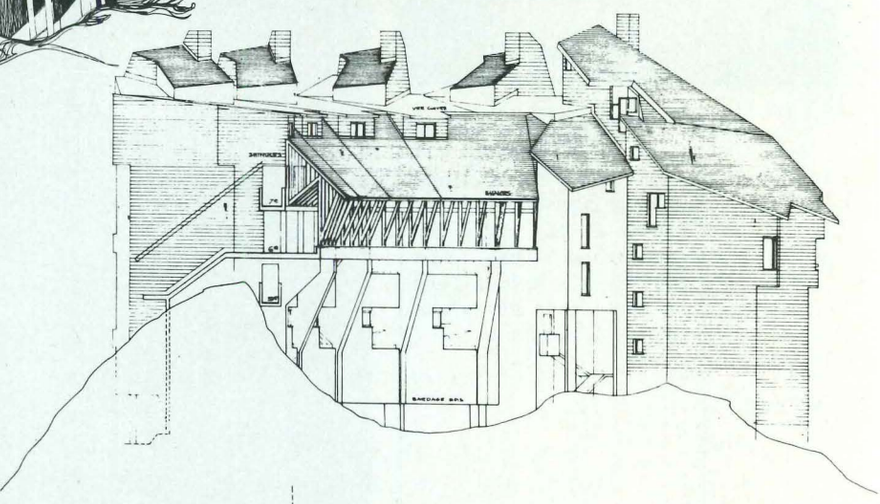


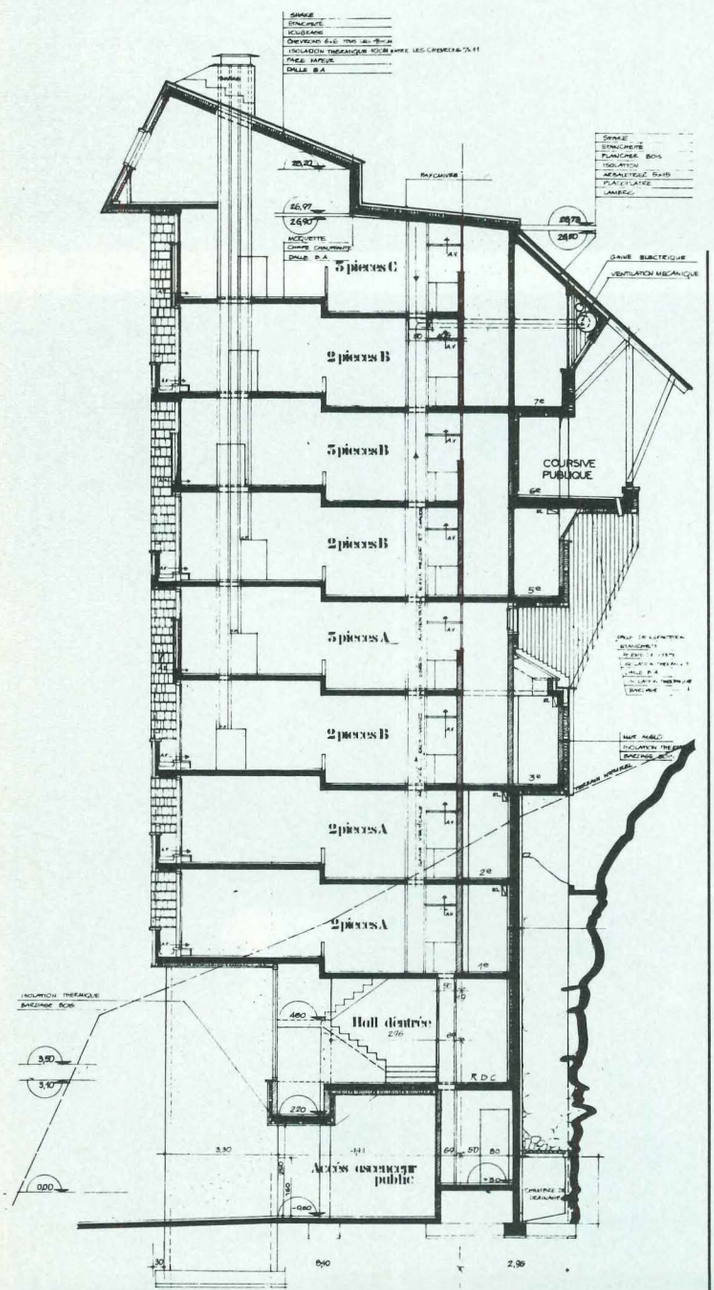




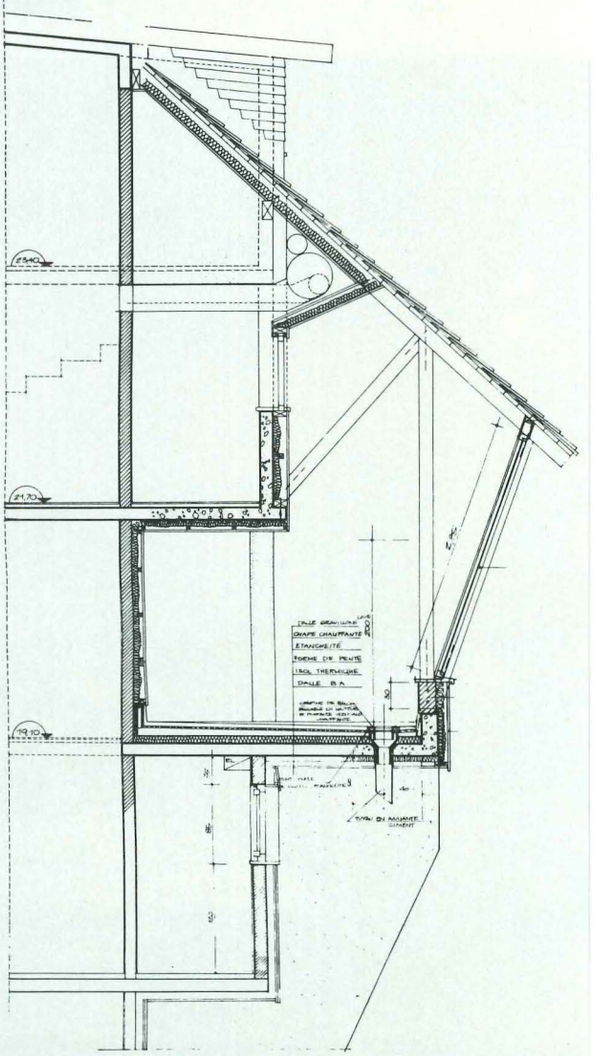
The restaurants and bars are playful and amusing and endlessly varied in shape and form, as can be seen in the photos at left. Hotel and condominium suites (right and below) as well as chalet interiors (top) are equally fanciful and adroit.

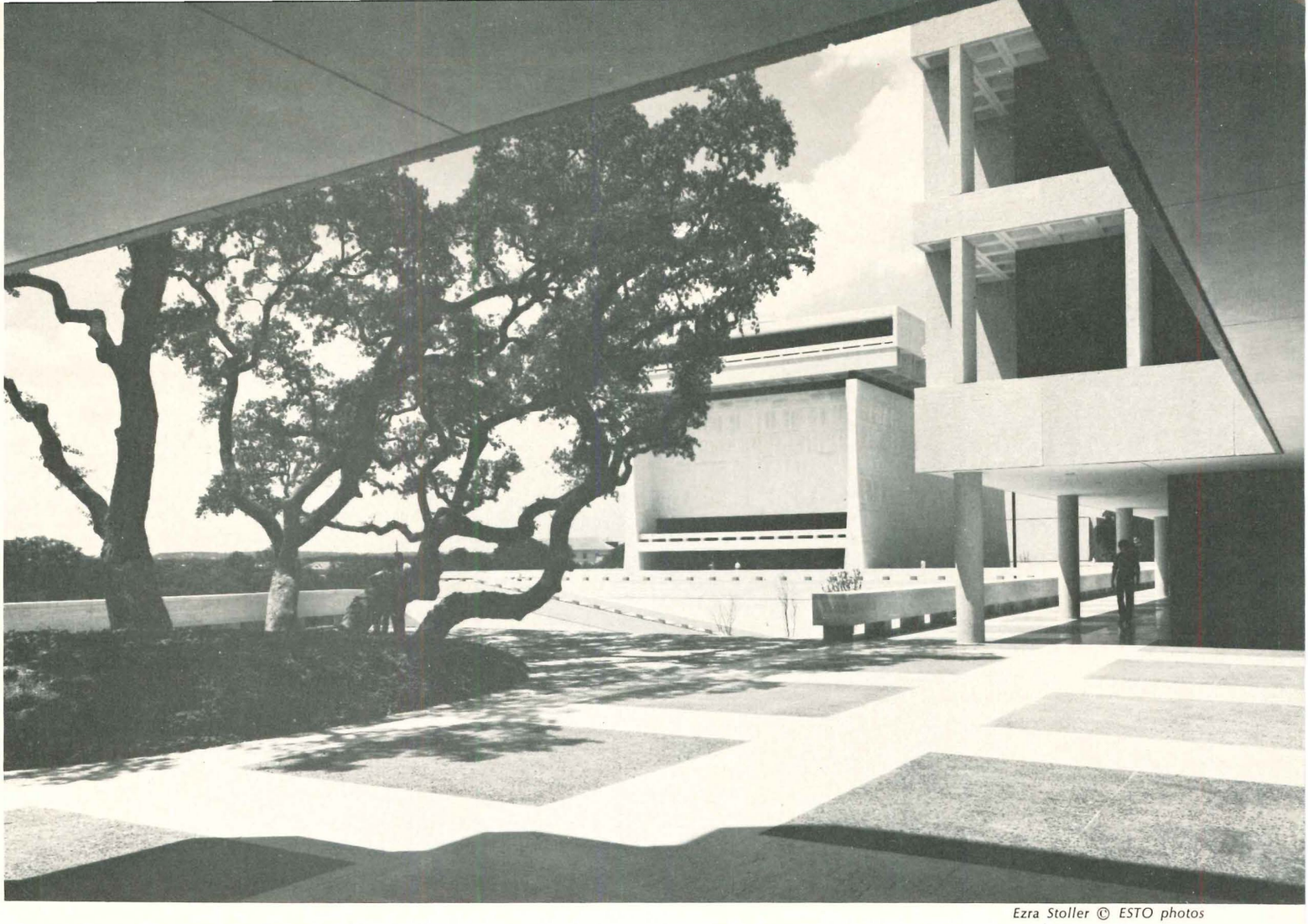






Like most of the buildings at Avoriaz, the hotel has a composite construction—a poured-in-place concrete structural system tied into the rock of the mountain, with wood framing of walls and partitions, and a red cedar-shingle skin.





Ezra Stoller © ESTO photos

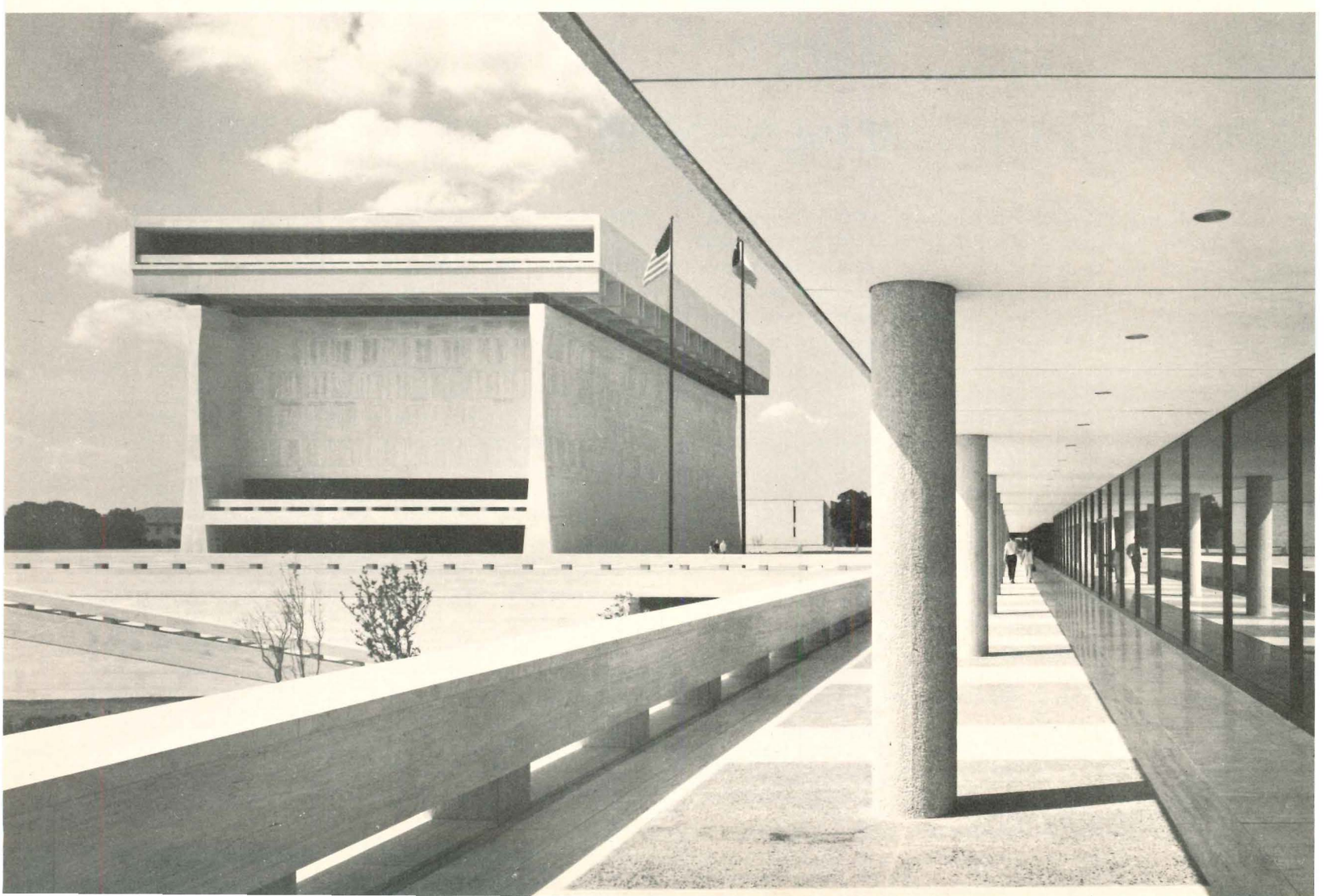
IN PRAISE OF A MONUMENT TO LYNDON B. JOHNSON

The monument, like marriage, has gone out of style—almost. People still get married, although women's lib and the new morality say they don't have to, and an occasional architectural monument rises upon the land, designed by architects who may actually disapprove of monuments—in principle—but not when they are given the rare and challenging chance to do one.

The Lyndon Baines Johnson Library and East Campus Library and Research Building, the work of Gordon Bunshaft of Skidmore, Owings & Merrill and R. Max Brooks, Barr, Graeber & White, and designed primarily to house 31 million papers and documents of Johnson's public career from 1935-1969, is a symbolic conception, intended to solemnize in stone the period now passed into history in which the nation was led by LBJ. The building also, of course, honors the former president himself, just as the Washington, Lincoln and Jefferson memorials commemorate their namesakes. Since the library houses a major archive, it partakes of the long architectural tradition of housing books and papers with the respect such works of man deserve—nobly—in monumental space. So the LBJ library is truly a monument and as such is considered by many to be an anachronism or worse.

For some critics even the words "monument" or "monumental" are pejorative, summoning images of millions of dollars diverted from pressing human needs and squandered instead on stone and marble to celebrate the dubious, not to say iniquitous deeds of an establishment villain. This line of reasoning, while it helps Lyndon Johnson's political enemies score points, should not be allowed to pass for architectural criticism. For one thing, amounts of money diverted from human needs to construct monuments are a pittance in comparison to the flow of public and private funds to other areas of doubtful social utility. Further, how can we be sure that there is no longer a human need for monuments? Man has built them since pre-history and people have been going to look at them ever since. For some people a world without monuments would be a world with no place to go. Finally, do we really have to approve of the hero and his time in history to be interested in, or learn from, or like, his monument? If our refusal to acknowledge as art all creations which do not fit our political, social and moral beliefs is pushed to the extreme, the fallacy becomes obvious: if we think most Renaissance popes were evil, does this mean we disallow the importance of the work of Michelangelo?

LBJ's presidency will continue to be evaluated for many generations and his popularity as an historical figure and his rank among U.S. presidents will periodically rise and fall. It is unfortunate that his monument should open to the public in a year when so many journalists and critics are down on monuments and down on him, for the library is an important work of architecture and deserves to be enjoyed and assessed on its own terms.—*Mildred F. Schmertz*

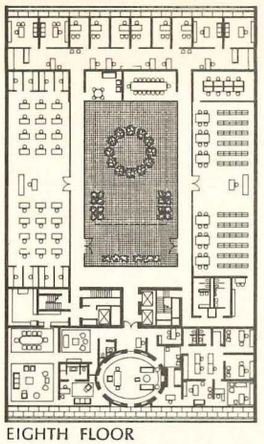


Upon visiting the LBJ library one first becomes aware of how superbly it is sited and landscaped. Paths about the site, outlooks, places to pause and rest, plazas—all have been designed to display the structure at its handsomest, dramatize its best angles and set off the clumps of splendid live oaks which abound on the sloping lawns.

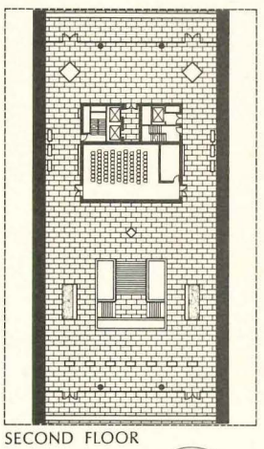
The library is best seen as one moves through the site, toward it, through it and away from it, rather than viewed straight on as a fixed object.

The shape of the dominant element which houses the archives, museum and, in the cornice, an office floor, suggests Japanese influence and is austerely monumental in form. In finish, however, thanks to its sensuous yet subtle profiles and fine detailing and craftsmanship, the building is ingratiating if not quite luxurious.

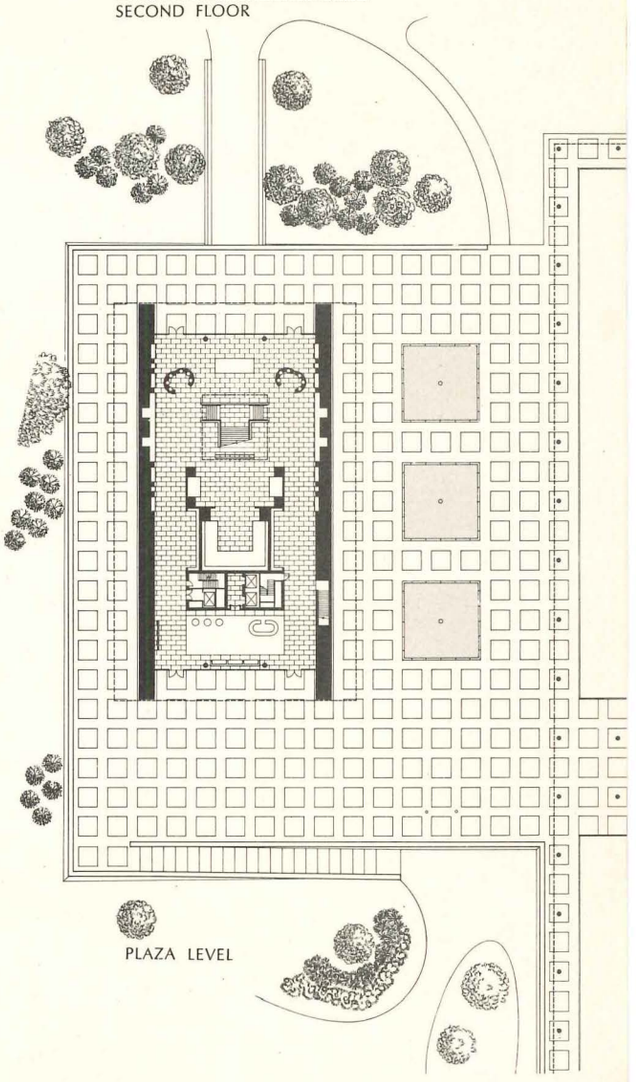
The site is situated to the east of the rather overbuilt campus of the University of Texas and is on axis with certain principal buildings of the university. The long low element, Sid W. Richardson Hall, designed and built at the same time as the LBJ Library, contains the LBJ School of Public Affairs, the Eugene C. Barker Texas History Center Library, the Texas State Historical Association, the Institute of Latin American Studies and the Latin American Collection Library. The entire site comprises 30 acres including the large parking lot, screened by the low wing.



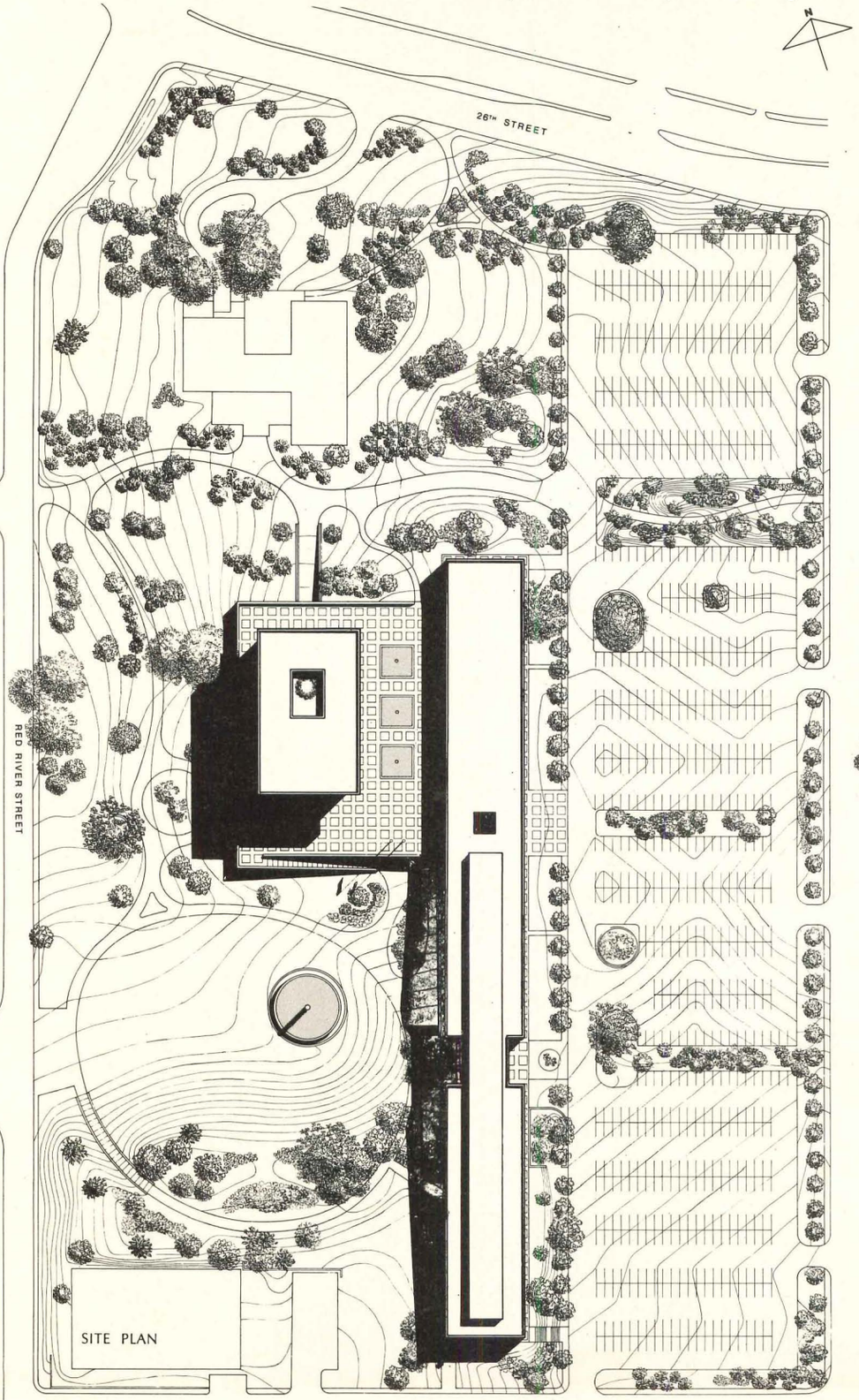
EIGHTH FLOOR



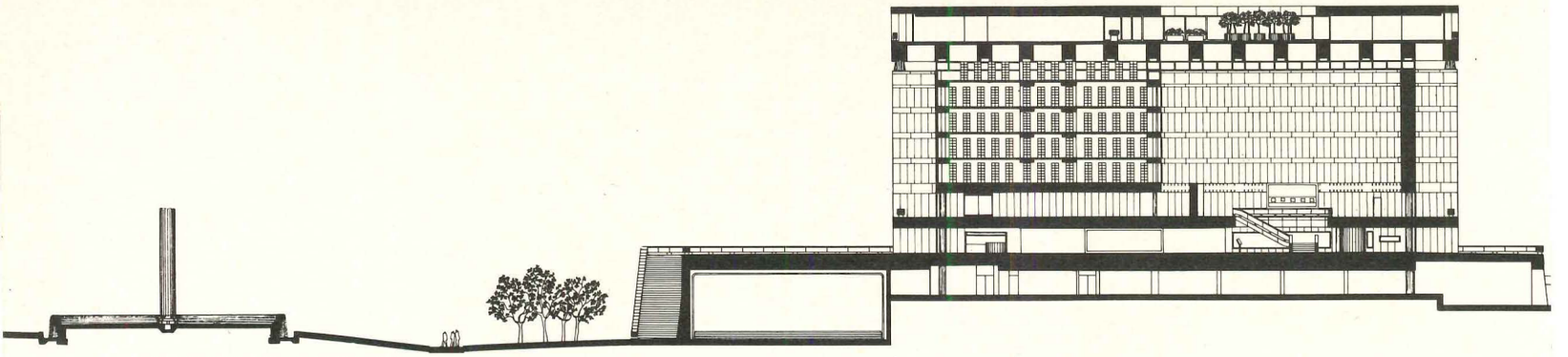
SECOND FLOOR



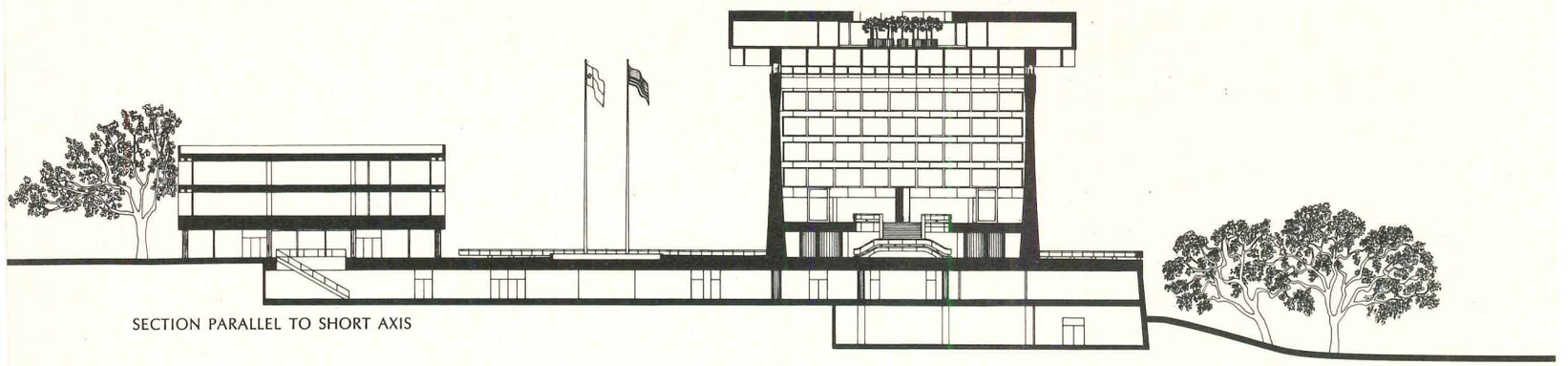
PLAZA LEVEL



SITE PLAN



SECTION PARALLEL TO LONG AXIS

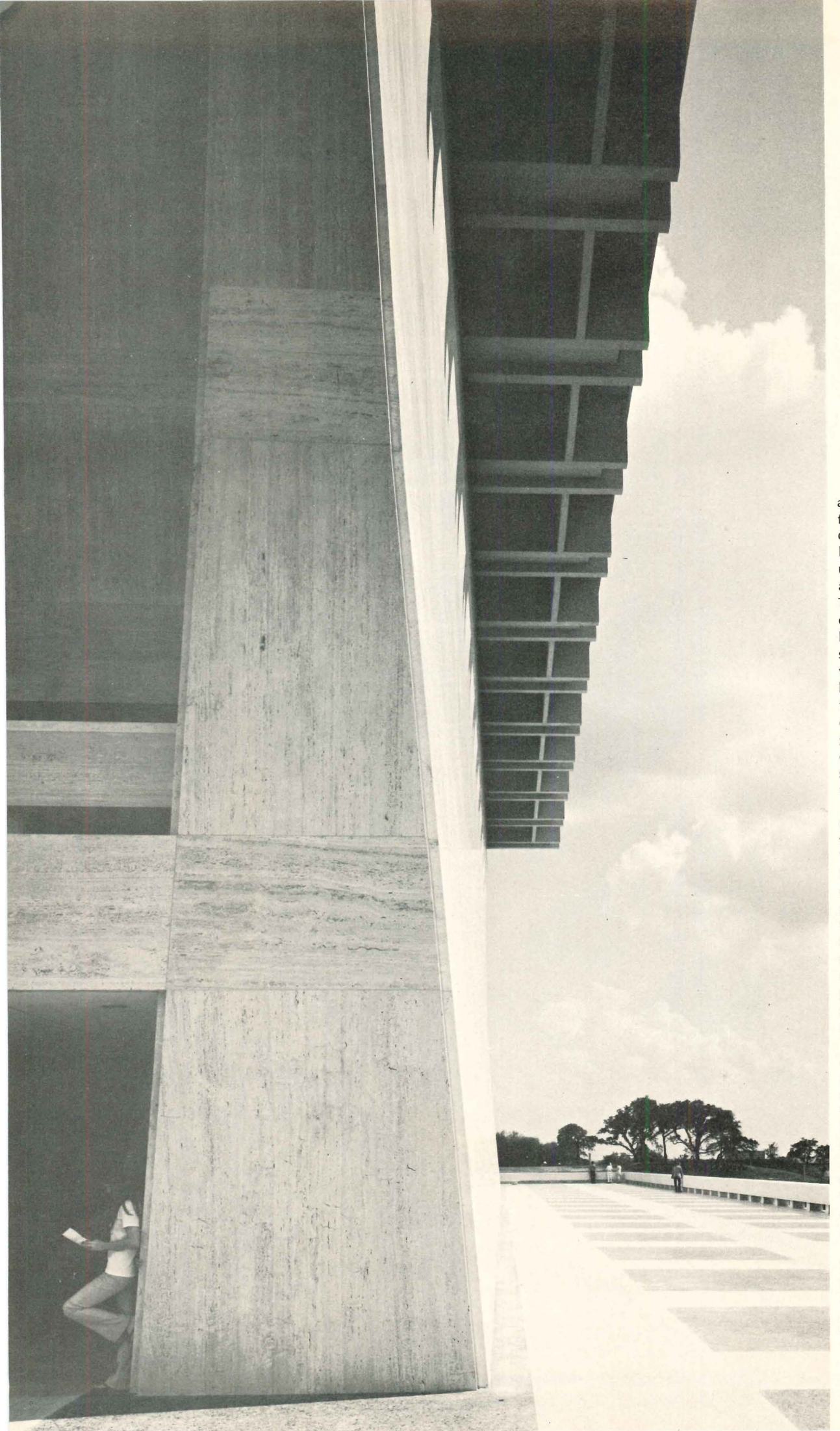


SECTION PARALLEL TO SHORT AXIS

A museum-library for presidential memorabilia and papers which is conceived in monumental terms has no real precedents in architectural form and thus presents a special challenge to its architects.

While it is true that libraries commemorate the presidencies of Herbert Hoover, Franklin D. Roosevelt, Harry S. Truman and Dwight D. Eisenhower, these do not attempt to celebrate history in the language of architecture. A source close to the former President said that if it had been up to LBJ, the library would probably not have been a monument at all, but rather a low lying structure similar to the buildings on his ranch 70 miles to the west. The library became a monumental work of architecture, according to this source, because Mrs. Johnson thought it should be and devoted much time and energy to developing the program and finding the right architects for the job.

As the photograph (right) indicates, the archive itself is the heart of the building. The papers, stored in red buckram boxes with gold Presidential seals, and displayed row upon row behind huge glass doors, are the climax of a beautifully controlled spatial sequence.

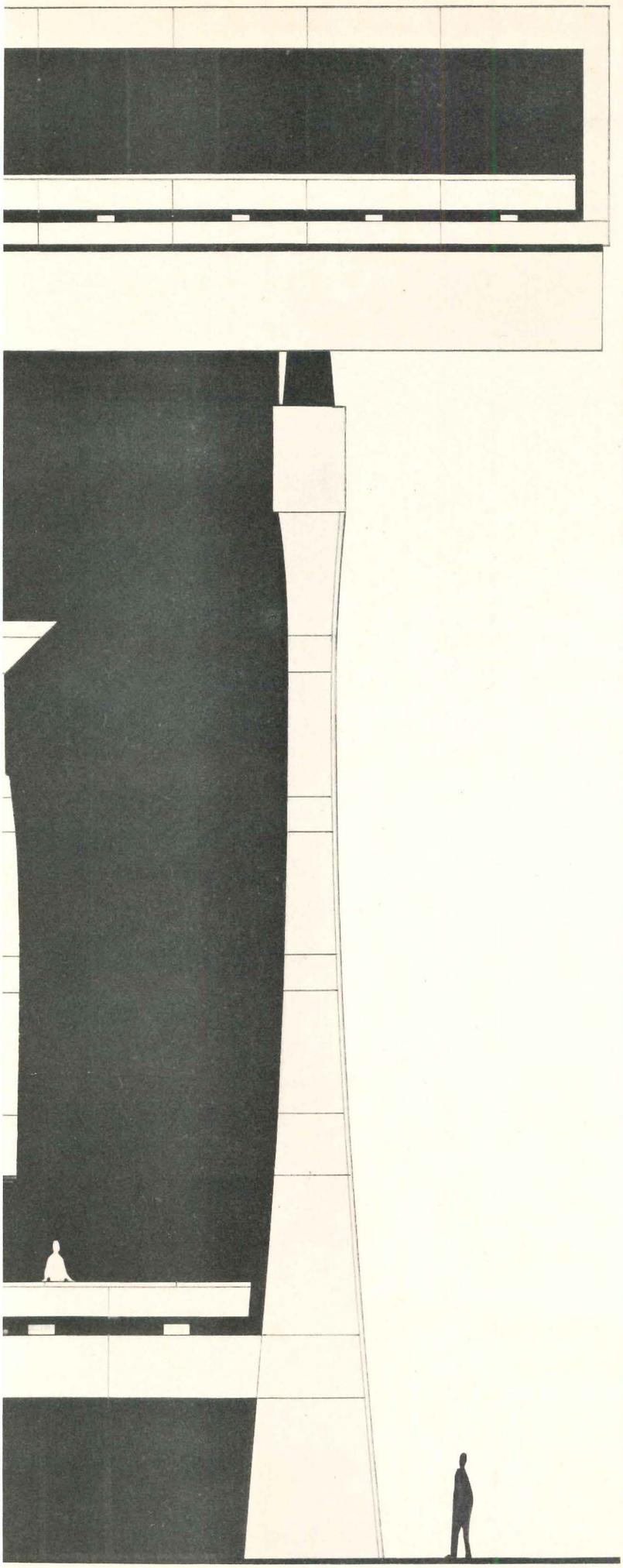


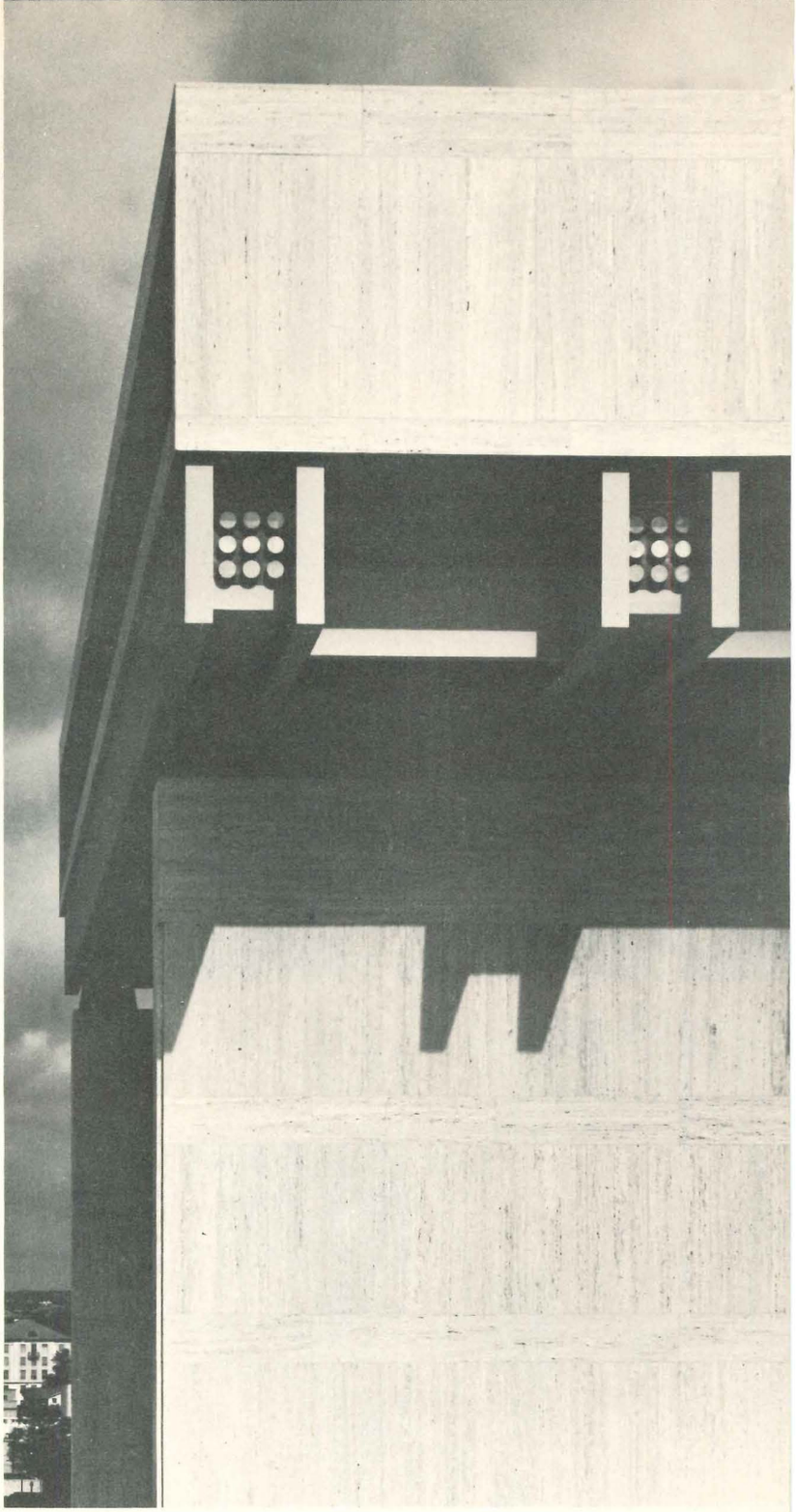
Two great parallel walls, 200 feet long, 65 feet high and 90 feet apart, define the main mass of the library. The two walls curve upward and downward from a base thickness of eight feet. The tapering of these walls delineates the vertical cantilevered thrust of the closely spaced columns within the walls. At three quarters of the height of the walls, the surface splays out to receive and distribute the weight of the girders which support the cantilevered top story and span the space between the walls.

The weight of the girders is transferred to these walls by large steel pins. These are truncated pyramids three-feet-high and serve to separate the walls and the girders. The space between the girders and the walls is filled with glass to help define the juncture of the walls and the roof structure and to permit the visual flow of space between the exterior and interior.

The girders are massive hollow concrete structural members five-feet-wide and seven-feet-high which span 90 feet and cantilever 16 feet beyond the walls of the building. The girders are connected to each other by thin stiffeners as shown in the detail photo (top right) to form a strong pattern visible from below.

The two tapering main walls also contain mechanical ducts which rise from the mechanical system within the podium. They are covered with Roman travertine.





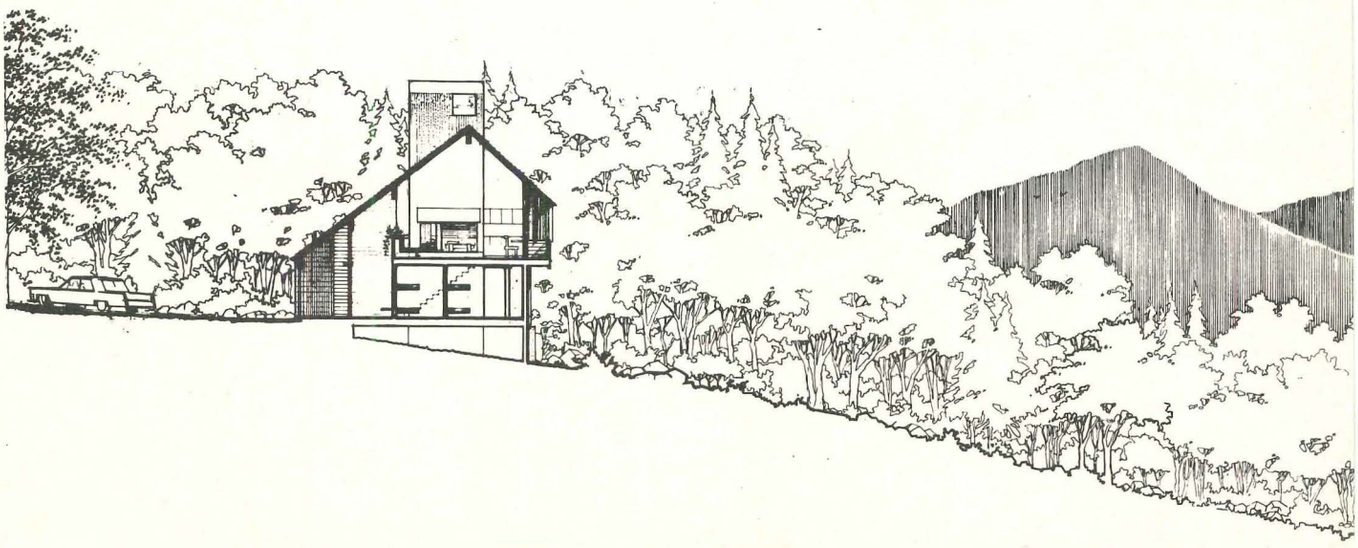
The former President's suite (above) occupies the eighth floor which also includes administrative space, a roof terrace, a ⅞th-inch scale replica of the Oval Office in the White House and a helicopter landing pad. Construction cost was $30.88 per square foot.

LYNDON BAINES JOHNSON LIBRARY AND EAST CAMPUS LIBRARY AND RESEARCH BUILDING, Austin, Texas. Owner: *The Board of Regents of the University of Texas.* Associated architects: *Skidmore, Owings & Merrill and Brooks, Barr, Graeber & White—partners-in-charge: Gordon Bunshaft (SOM), design; R. Max Brooks (BBG&W), project development; for SOM: Frederick C. Gans, project management; Sherwood A. Smith, design; Leon Moed, working drawings; Davis B. Allen, interiors; Carroll Donoghue, landscape; for BBG&W: Charles Tilly, working drawings; David Yarborough, field coordination;* structural engineers: *Paul Weidlinger-W. Clark Craig & Associates;* mechanical and electrical engineers: *Gregorson, Gaynor & Sirmen, Inc.;* lighting: *Edison Price, Inc.;* acoustics: *Bolt, Beranek & Newman;* fountain engineering: *Fountains, Inc.;* exhibit design: *Arthur Drexler;* general contractor: *T. C. Bateson Construction Co.*

Patz/Lisanti, Inc. photos

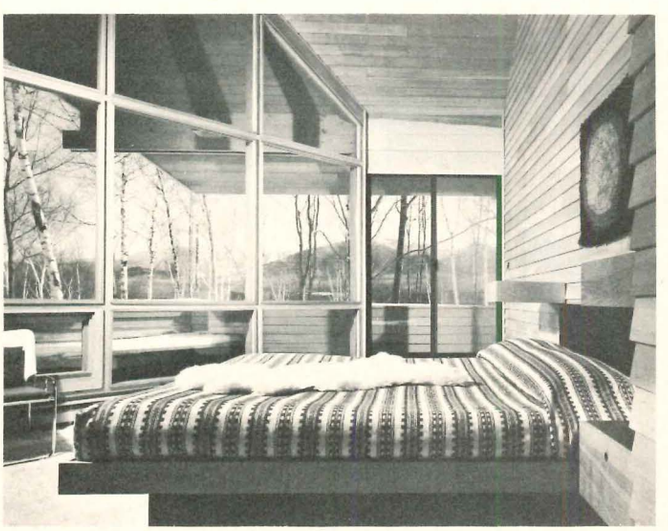
FOUR VACATION HOUSES

The open and attractive sites usually chosen for vacation houses are often a major influence on architectural form. These four houses, each in a region with distinct climate and character, express those determinants as well. Thus this house in the White Mountains (also shown overpage), used for skiing weekends and vacations, makes good use of a sloping, wooded site and expresses an appropriate sense of shelter from winter winds.



The logical combination of masonry and frame construction gives a crisp clarity to the house (below) and the sheltering roof appears to float above the band of south-facing windows. The massive chimney not only stabilizes the structure but provides a suitably-scaled fireplace. From the built-in couch, skiers can watch the sun set on distant peaks.

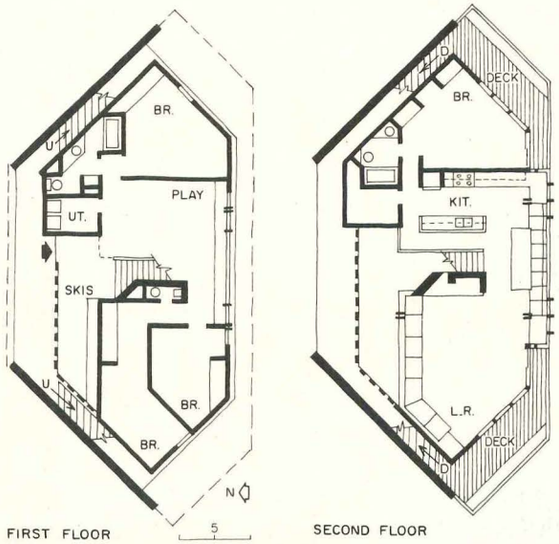
A house in the White Mountains:



crisply detailed shelter enhances a perfect site

The wooded slope facing south toward the Presidential range of the White Mountains is perfect for a winter vacation house. Architects Huygens and Tappé have not failed to make good use of it. A masonry shell of striated concrete block—especially visible across page—protects the two-story frame structure inside it from heavy north winds at the same time that it forms an extremely sheltered entry. On the sunny south side, glass walls and a balcony reach out to the splendid view. Although the massing is entirely symmetrical, including two narrow stairways from entry to balcony, interior planning is entirely free. Three bedrooms, some with four bunks each, along with a recreation area, have been fitted into the lower floor. The narrow hemlock clapboards used on the balcony (far left) also are used on the interior walls and ceilings. The interiors and most of the furniture were designed by the architects.

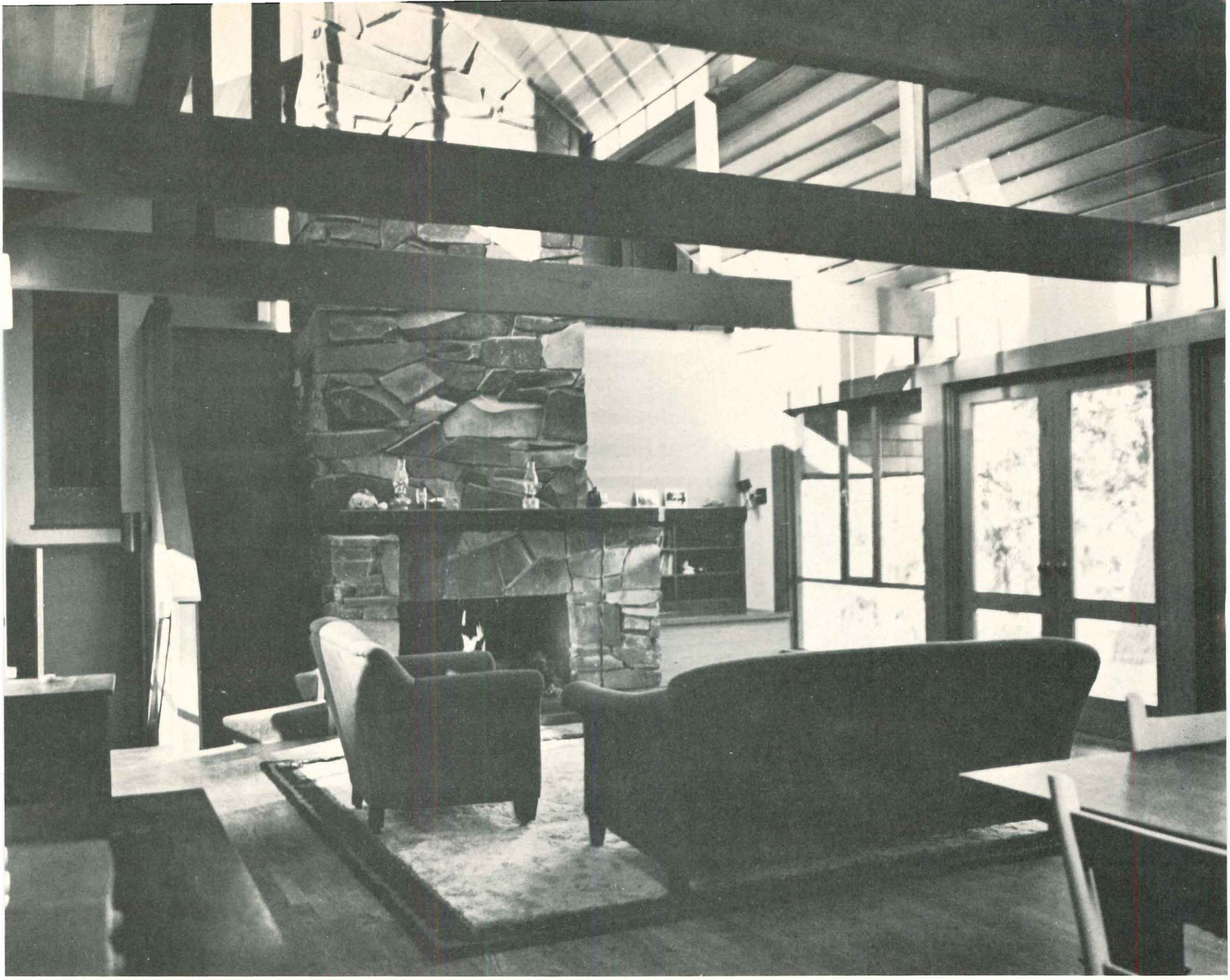
Location: White Mountains, New Hampshire. Architects: *Huygens and Tappé;* engineers: *Souza and True* (structural), *William R. Ginns* (mechanical), *Lotters and Mason Assocs.* (electrical); contractor: *Philip Robertson.*



Mary Randlett photos

Marvelously different site conditions in three directions and dramatically varying atmospheric conditions, (above) justify an unusual amount of formal contrast, one elevation to another, in this modest three-bedroom house. Light from a huge west-facing clerestory and from doors and windows on both sides of the main floor fills the living room (opposite page) all day long.

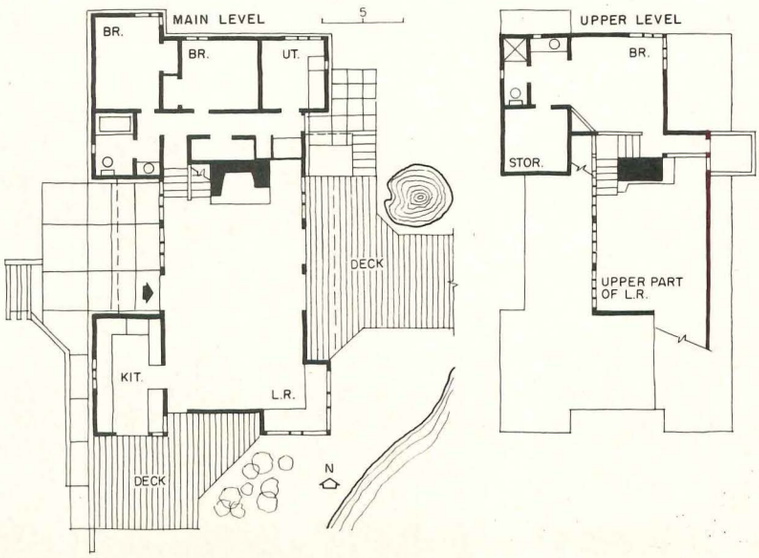
A house on Puget Sound:



fresh expression of regional frame construction

Where foggy Northwest woods and the waters of Puget Sound meet, architect A. O. Bumgardner has created a romantic year-round vacation house. Responding to his client's memories of childhood summers in an earlier cottage on the same site, he has echoed the forms and techniques of indigenous residential frame construction. But also responding to the site's orientation to the east, he has opened up large areas of the roof with clerestories that pull in afternoon light in summer and during the mild but gray winters. Since no other houses are nearby, large glass areas on the main floor also open the interior to the outdoors. A huge cedar on the northeast side of the house and a fresh-water pond (far left) behind the beach are two major elements of the site to which the form of the house reacts. Thus each elevation acknowledges its particular environment. Cedar shingles on walls and roof tie the composition together.

Location: Bainbridge Island, Washington. Owners: *Mr. and Mrs. Cappy Clarke;* architects: *The Bumgardner Partnership;* engineer; *Richard M. Stern* (mechanical); contractor: *Settle Construction Co.*

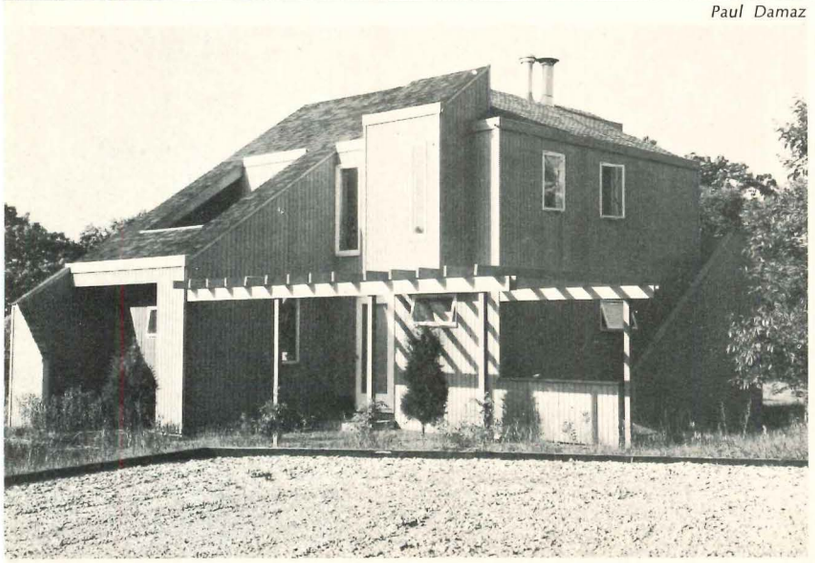


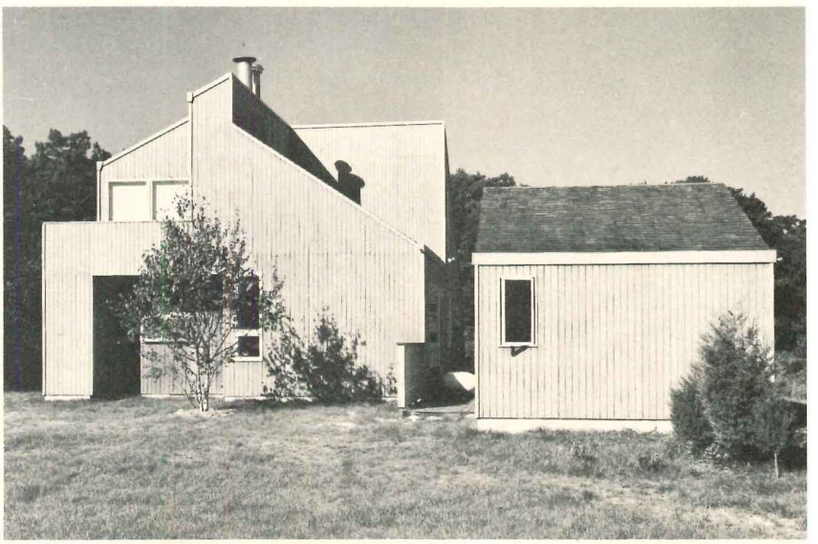
Simple wood-framed and plywood-clad volumes provide a lively interplay of form and shadow throughout the day. A trellis (below) at the entrance and the guesthouse provide varying degrees of spatial enclosure outdoors. Indoors (opposite page) a well-placed window bathes the living room wall with afternoon sun. The hexagonal brick pavers are used both indoors and on the terrace.

George Cserna photos except as noted

A house in the Hamptons:

Paul Damaz

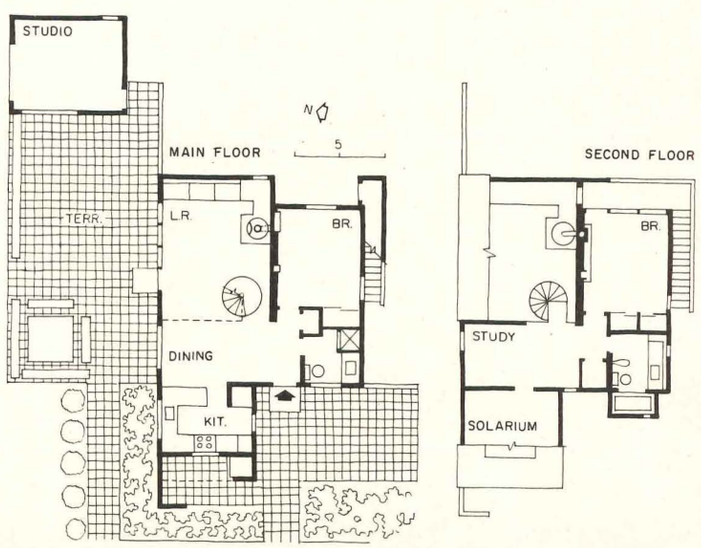


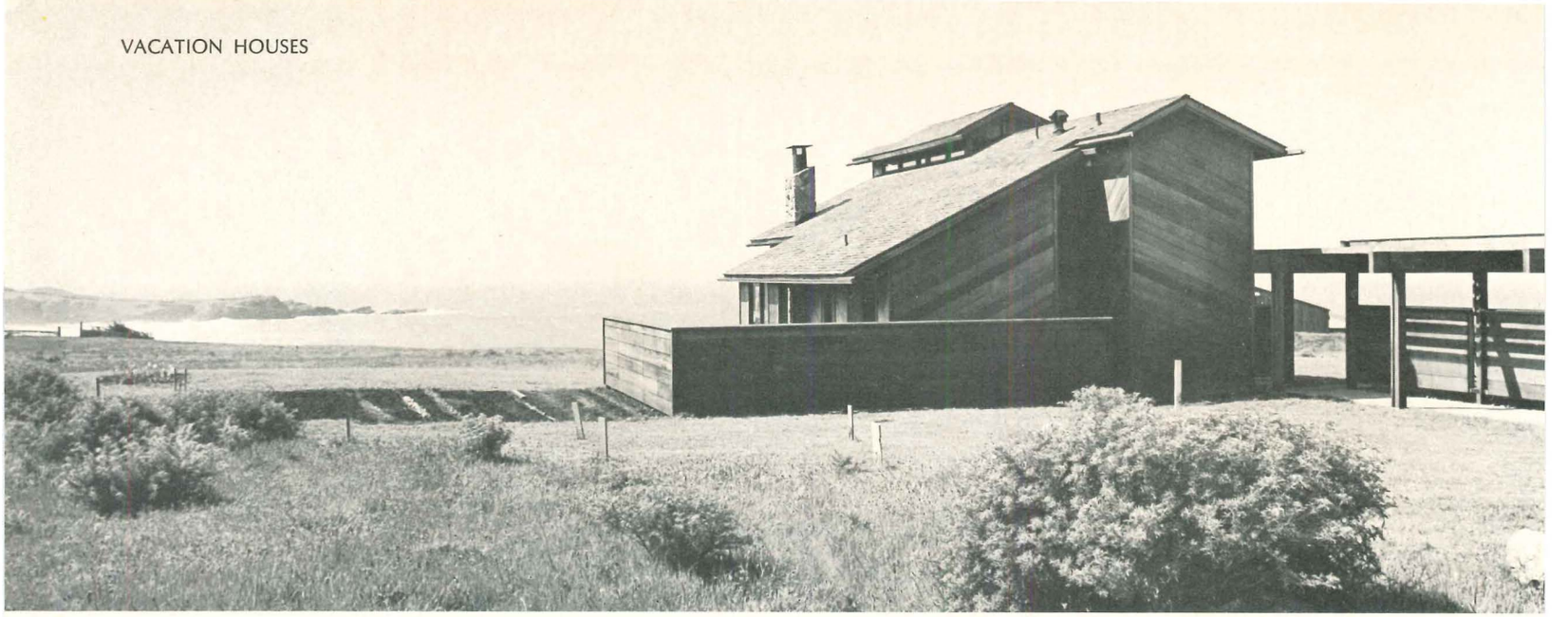


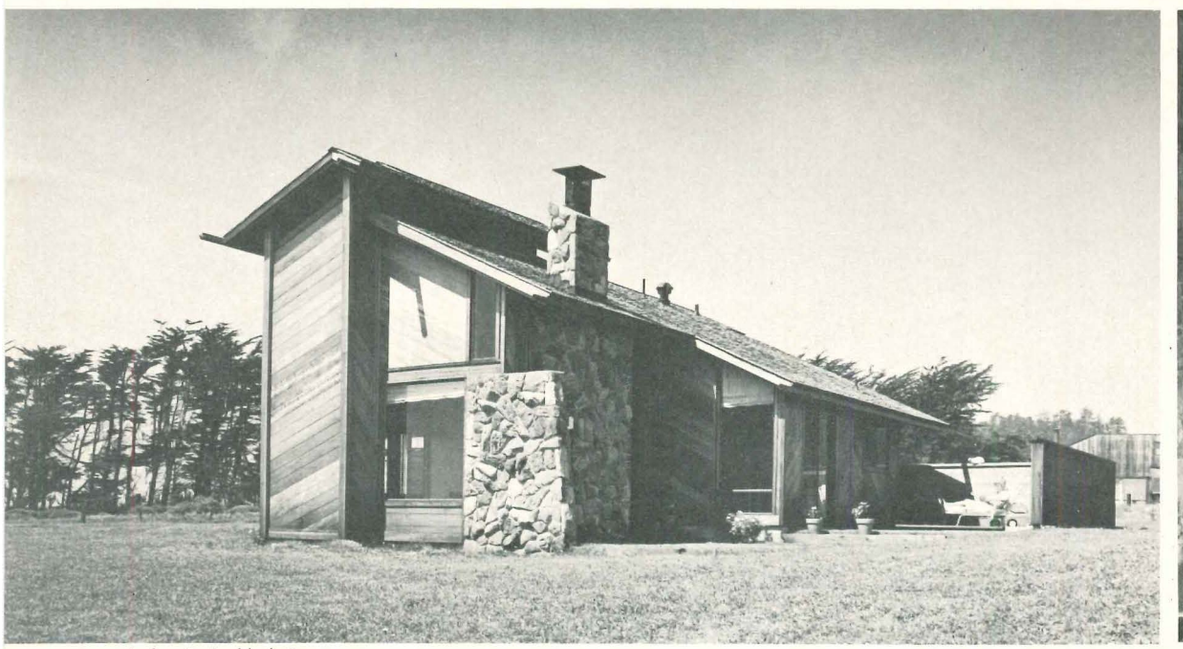
design enriched by careful solar orientation

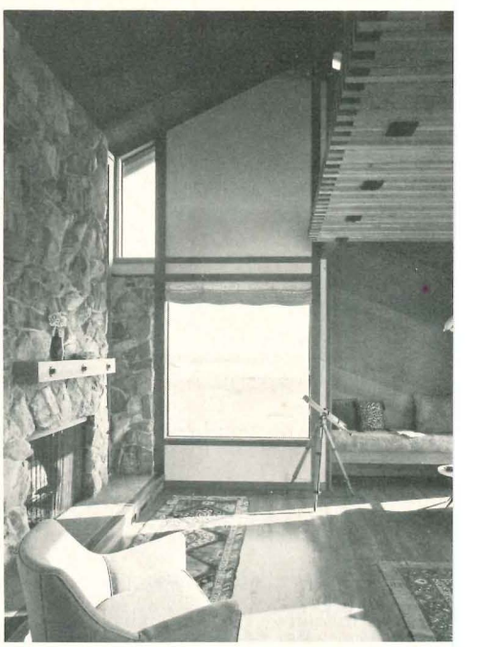
Looking north across a large field surrounded by trees, this sculptural vacation house has a site similar to many in eastern Long Island. Because of the immense popularity of the area as a New York City recreation spot, land costs along water's edge are extremely high. Thus, many modest houses are sited on agricultural land or in the woods. Paul Damaz has used a two-story, north-facing living room to tie the floors together into one free-flowing space. With the exception of bedrooms and baths, all the interior spaces are open to each other. Care has been taken to place windows where they catch the morning and late afternoon sunlight. The tub in the master bath, in its own little turret, far left above the trellis, has a window specially placed for watching the sunset while bathing. A small separate structure to the northeast serves as a studio and guest house. The house is filled with works by artists whom Annie Damaz represents, including paintings, sculpture and prints.

Location: Springs, East Hampton, N.Y. Owner and architect: *Mr. and Mrs. Paul Damaz of Damaz and Weigel;* contractor: *William Lynch.*







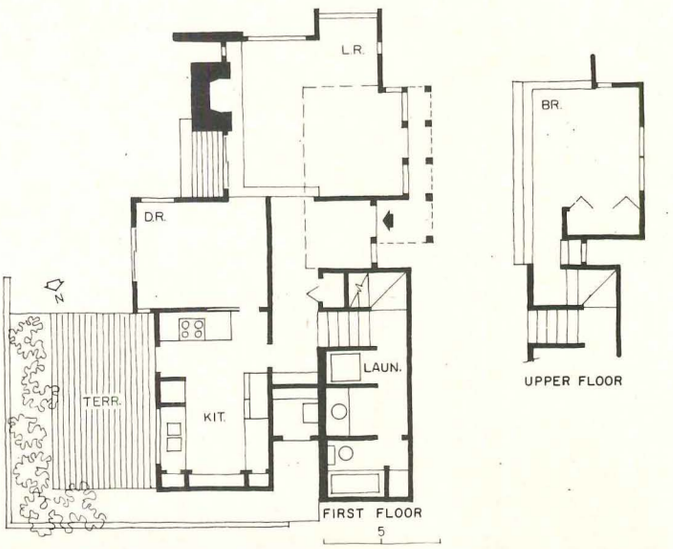


Joshua Freiwald photos

A house at Sea Ranch: informality expressed in plan, form and details

It used to be that "vacation house" meant a modest cottage in a lovely spot. While none of the houses in this collection are large or pretentious, Donald Sandy's house for Mr. and Mrs. John Crossman comes closest to that simple old-fashioned idea. The plan, the form and the details all express an informality that seems appropriate for rural living. However, informality does not mean shoddy or incomplete finish. For $23,000 architect Sandy has provided interiors, above right, with walls of the same diagonal resawn redwood boards as on the exterior, oak floors and a large fireplace of field stone found on the site. The massive chimney provides important shear resistance to the Pacific Ocean winds, which were carefully charted when Sea Ranch was conceived and which have contributed a groundhugging silhouette to this house and others built there. A future bedroom addition will supplement the sleeping loft which has a unique floor structure of laminated 2x4s.

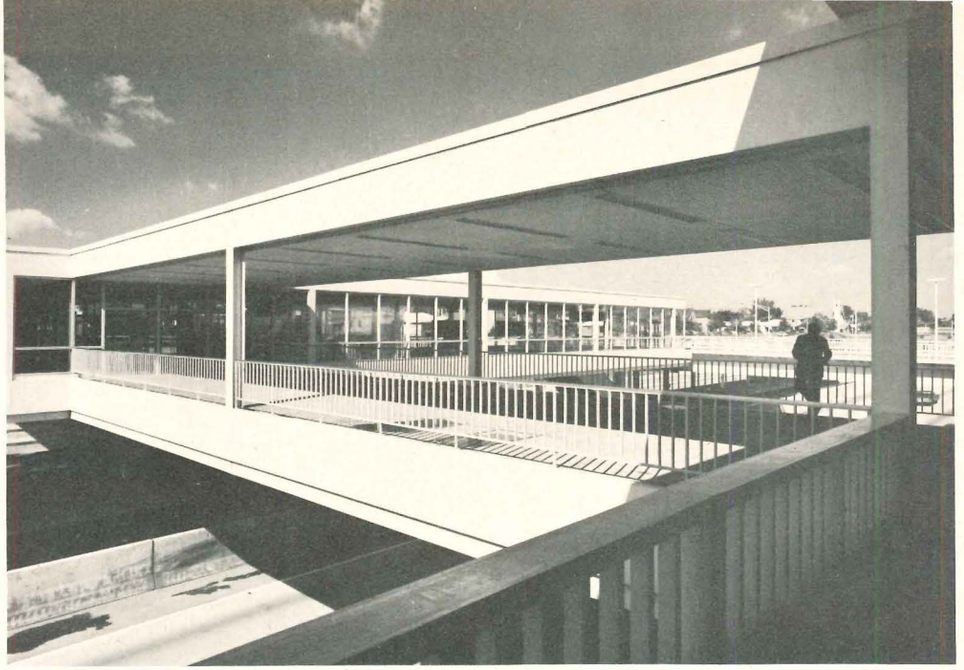
Location: Sea Ranch, Sonoma County, California. Owners: *Mr. and Mrs. John Crossman;* architect: *Donald Sandy, Jr.;* contractor: *Bill Pauley.*

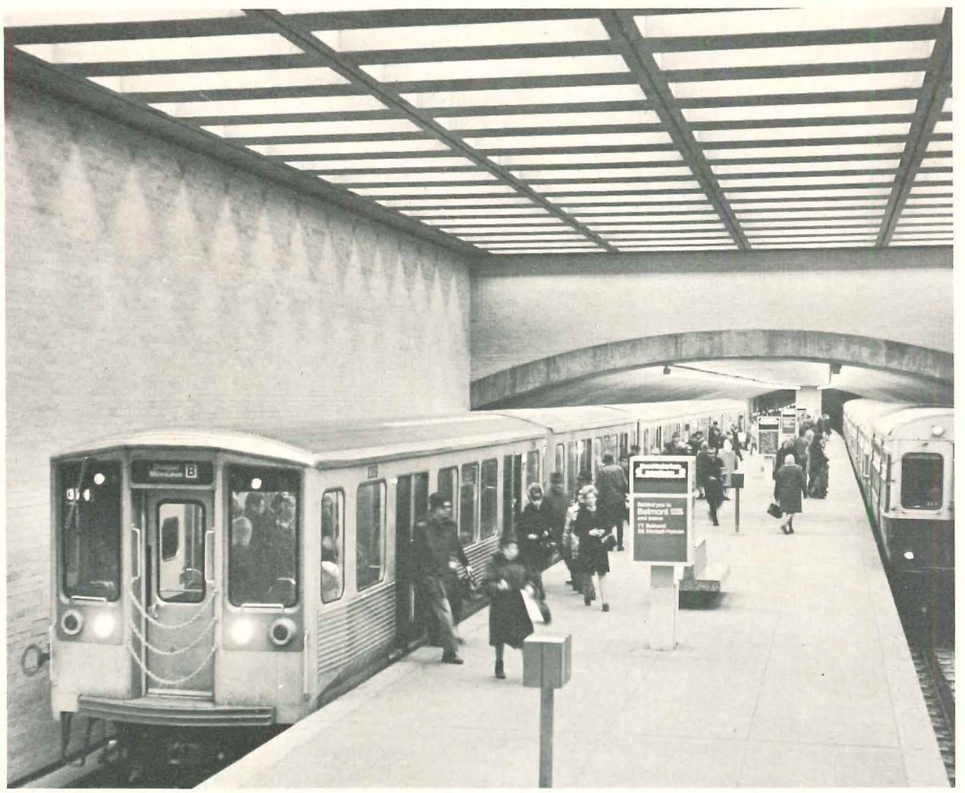


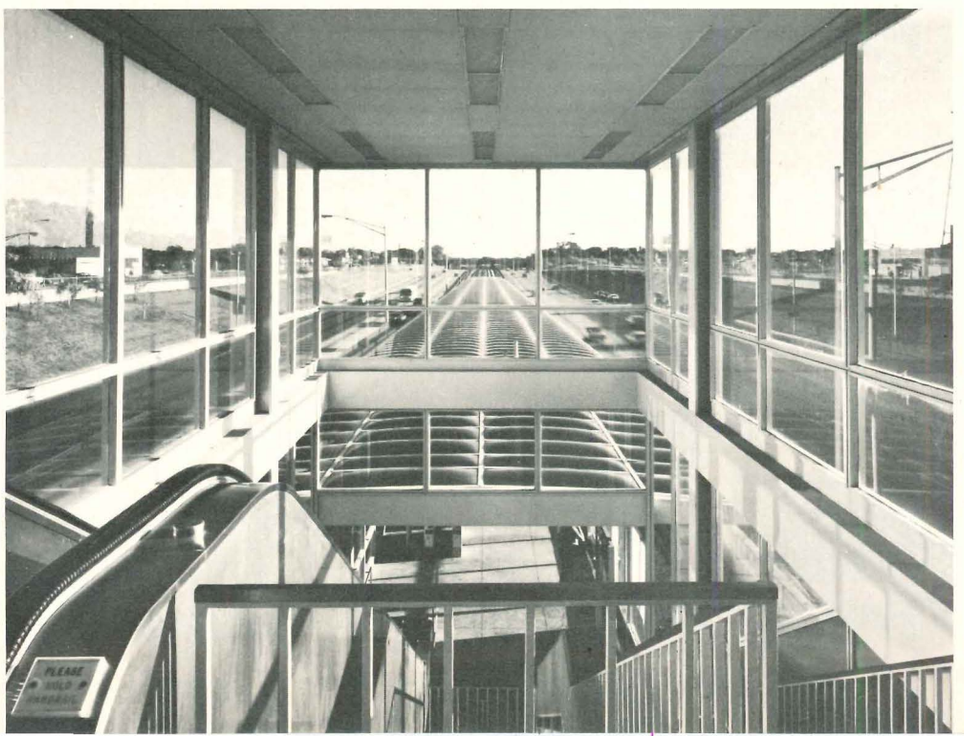
CHICAGO'S NEW RAPID TRANSIT EXTENSIONS

Utilizing an existing public right-of-way (the median strip between twelve lanes of motor expressway), Skidmore, Owings & Merrill has completed two long-planned, high-speed transportation corridors that link the Loop with the city's suburbs. In making this substantial commitment to Chicago's urban future, city officials and designers have worked within the limits of an existing mass transit system but have opted for quality.

Ezra Stoller © ESTO photos







The two new extensions to Chicago's rapid transit system begin from existing downtown terminals. One line, occupying the median strip of the Dan Ryan Expressway, extends service southward to the new 95th Street Station near Calumet Park. The second extension, to the north and west, carries passengers as far as Jefferson Park, hard by O'Hare International Airport. Since 1966, when design began, 17 handsome new stations have been put in use.

Working with engineers DeLeuw, Cather & Company, and under the Chicago Transit Authority, SOM began by defining important design objectives. These included: 1) a pleasant transit environment; 2) convenience and easy flow at rush hours; 3) security at all hours; 4) surfaces that could absorb hard usage without undue upkeep.

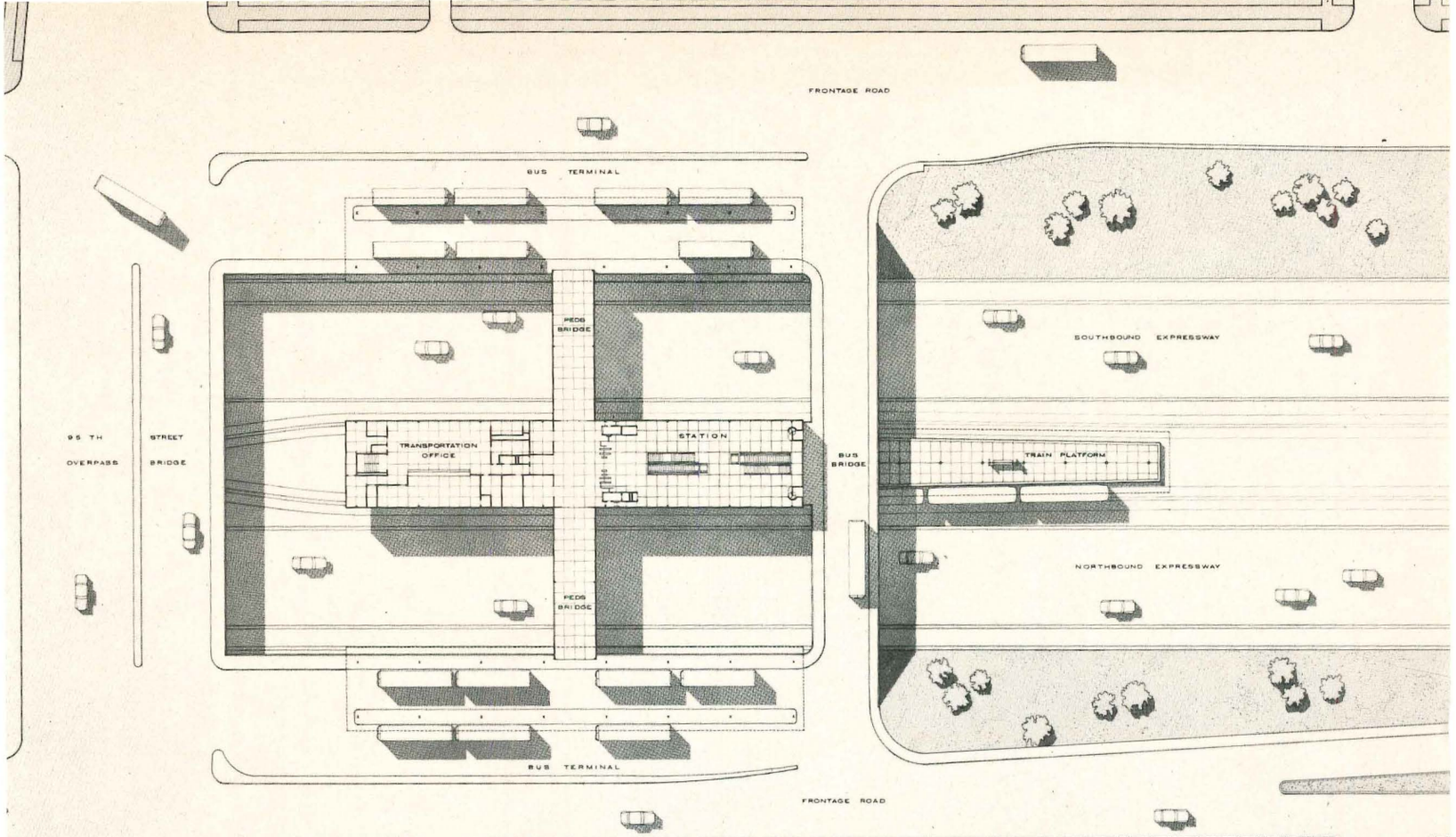
These criteria led to a basic station design with three elements: a boarding platform, a fare collection area, and a waiting area for connecting buses. All vertical connections are made with escalators.

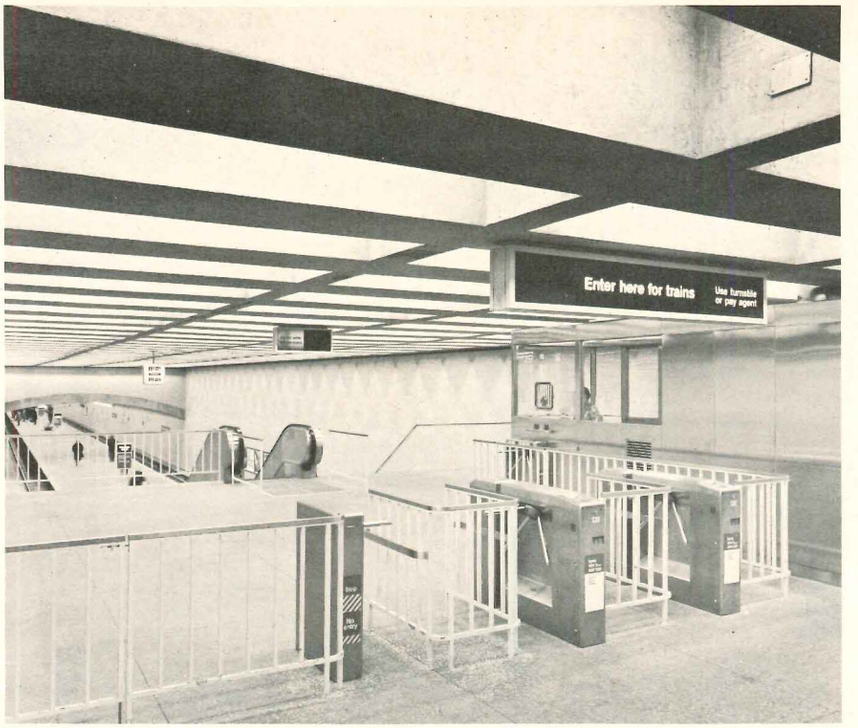
The design of terminal stations (Jefferson Park and 95th Street Stations) offered a special challenge. At 95th Street (photo and plan at right), the entire facility including bus stations had to be constructed within the slender right-of-way. SOM's innovative solution employs two bus terminals (one for departures, one for arrivals) spaced out on opposite sides of the expressway and linked by pedestrian and bus bridges. To avoid purchasing additional property, both terminals were created on land fill within the right-of-way. Fare collection is located at bridge level and passenger platforms a level below.

All stations make maximum use of glass walls both for day-lighting and for security. Underground platforms are spanned with concrete arches that eliminate the need for intermediate support, leaving the platform free of columns. Above-grade loading platforms are covered with light steel canopies, crisply detailed and painted off-white. These handsomely-designed canopies follow both the horizontal curve and the vertical profile of the tracks. By allowing the cantilevered canopy to extend beyond the midpoint of the car, passengers are protected from water run-off while boarding. To increase the cheerfulness of these spaces, many canopies are covered in clear plastic domes (photo page 129).

These new stations, thoughtfully designed and carefully integrated with city bus routes, are a substantial addition to Chicago's public transit system. Planners in other cities are watching with interest.

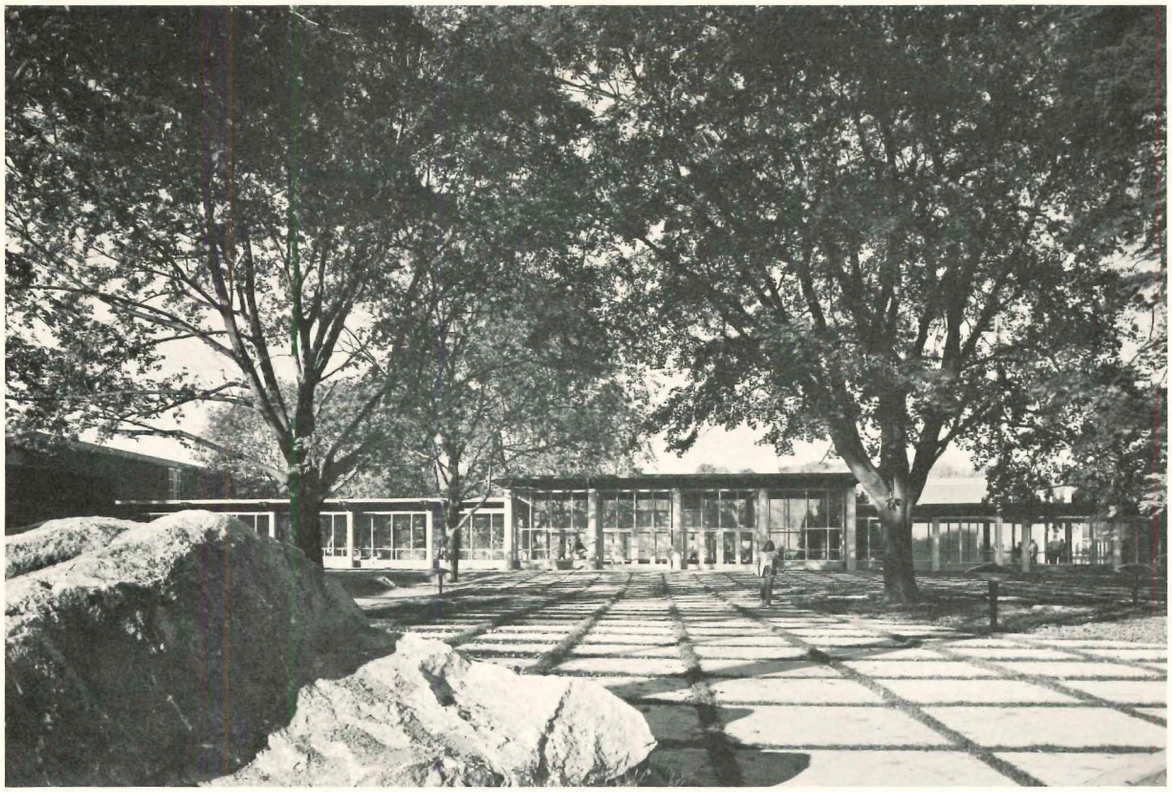
CHICAGO RAPID TRANSIT, Chicago, Illinois. Architects and Engineers: *Skidmore, Owings & Merrill—Myron Goldsmith, partner in charge of design; Fred W. Kraft, partner in charge of management; Richard L. Kreutz and Kenneth Mullin, project managers; Pao-Chi Chang, project designer;* coordinating engineers: *DeLeuw Cather & Company;* graphics consultants: *Goldsholl & Associates;* general contractors: *J. M. Corbett Company, Paschen Construction, Inc. and W. E. O'Neil Construction Company.*


FRONTAGE ROAD
BUS TERMINAL
PEDS BRIDGE
SOUTHBOUND EXPRESSWAY
95 TH STREET OVERPASS BRIDGE
TRANSPORTATION OFFICE
STATION
BUS BRIDGE
TRAIN PLATFORM
NORTHBOUND EXPRESSWAY
PEDS BRIDGE
BUS TERMINAL
FRONTAGE ROAD



A consistent system of graphics and directional information was developed by the architects in cooperation with Morton Goldsholl Design Associates. All letters are white Helvetica set against a variety of color-coded backgrounds. The relative importance of the information being conveyed has been allowed to determine letter sizes. Turnstiles, transfer issuing machines, fare collection booths and escalator equipment are finished in stainless steel for appearance, durability and easy, trouble-free operation and maintenance. Agent's booths are air-conditioned, equipped with a toilet and fitted with large window panels for effective platform surveillance.

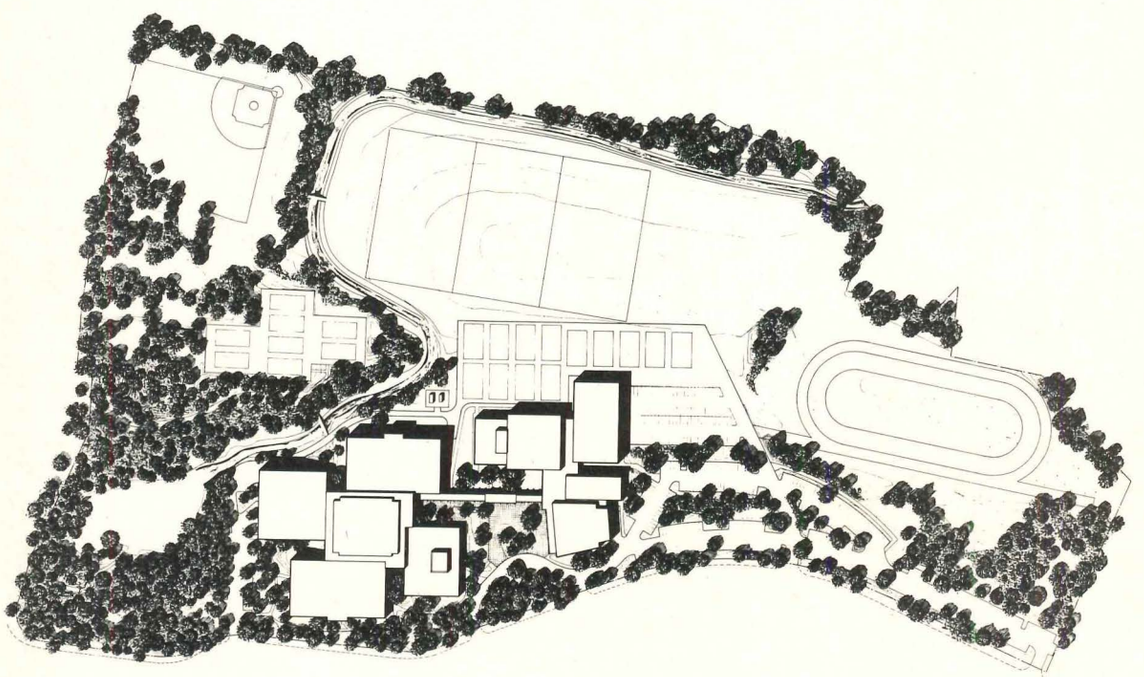
GREENWICH HIGH SCHOOL



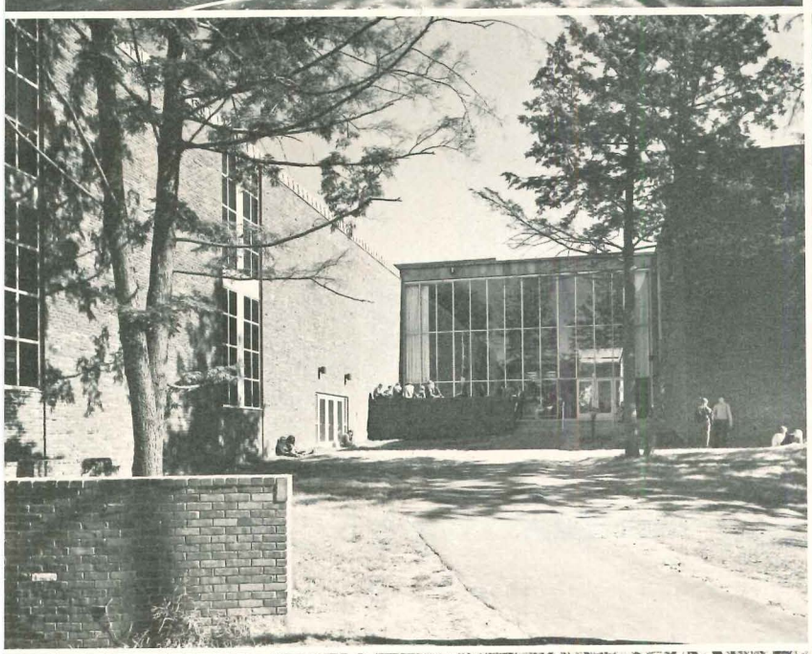
Roger Sturtevant photos

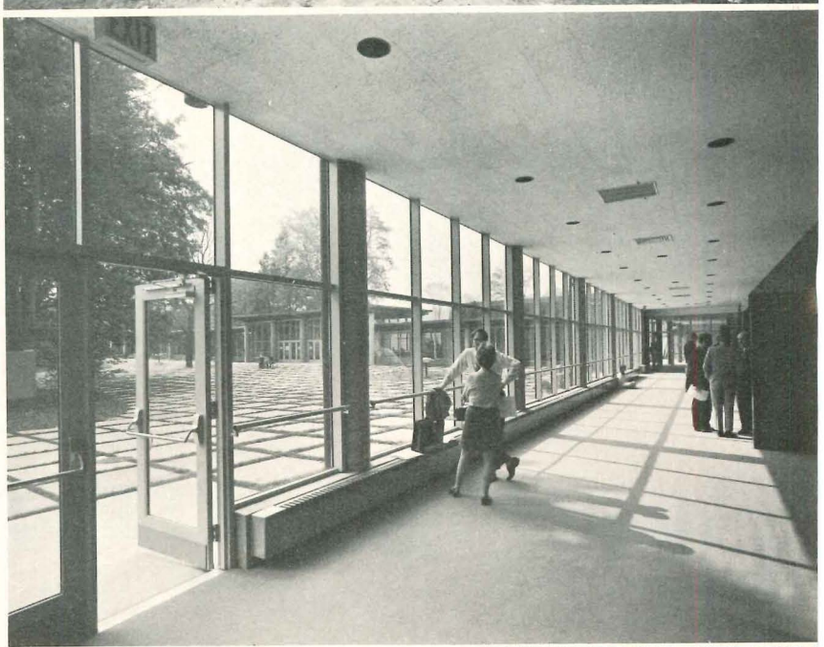
Rarely do public high schools have the qualities which abound in the new Greenwich High School in Greenwich, Connecticut. The beautiful site, with its fine old trees, rock outcroppings and natural pond, offered opportunities for development of unexpected and delightful places and spaces between and around the buildings. On such a site a single large building would have been unforgiveable. The architects, responsive to the beauty of the place and to the particular requirements of the program, wisely made the buildings small in scale and organized them in two clusters, one for academic functions, the other for specialized arts and physical education. This architectural solution saved trees and rock outcroppings, preserved the pond as a natural biological resource, and used all these attributes to provide the kind of places, indoors and out, whose connotation of building with landscape, and vice versa, remains indelible in memory years after graduation. The simple vocabulary of the buildings' design is handled with equal sensitivity, and clearly expresses the school's emphasis on personalized education for each student. Where the "house" concept, on which the academic program is based, divides the 2,750 students into four groups, the student center, a multi-activity focal point which acts as circulation and as "breathing space" for lively interaction, brings them all together as "student-citizens" of the school.

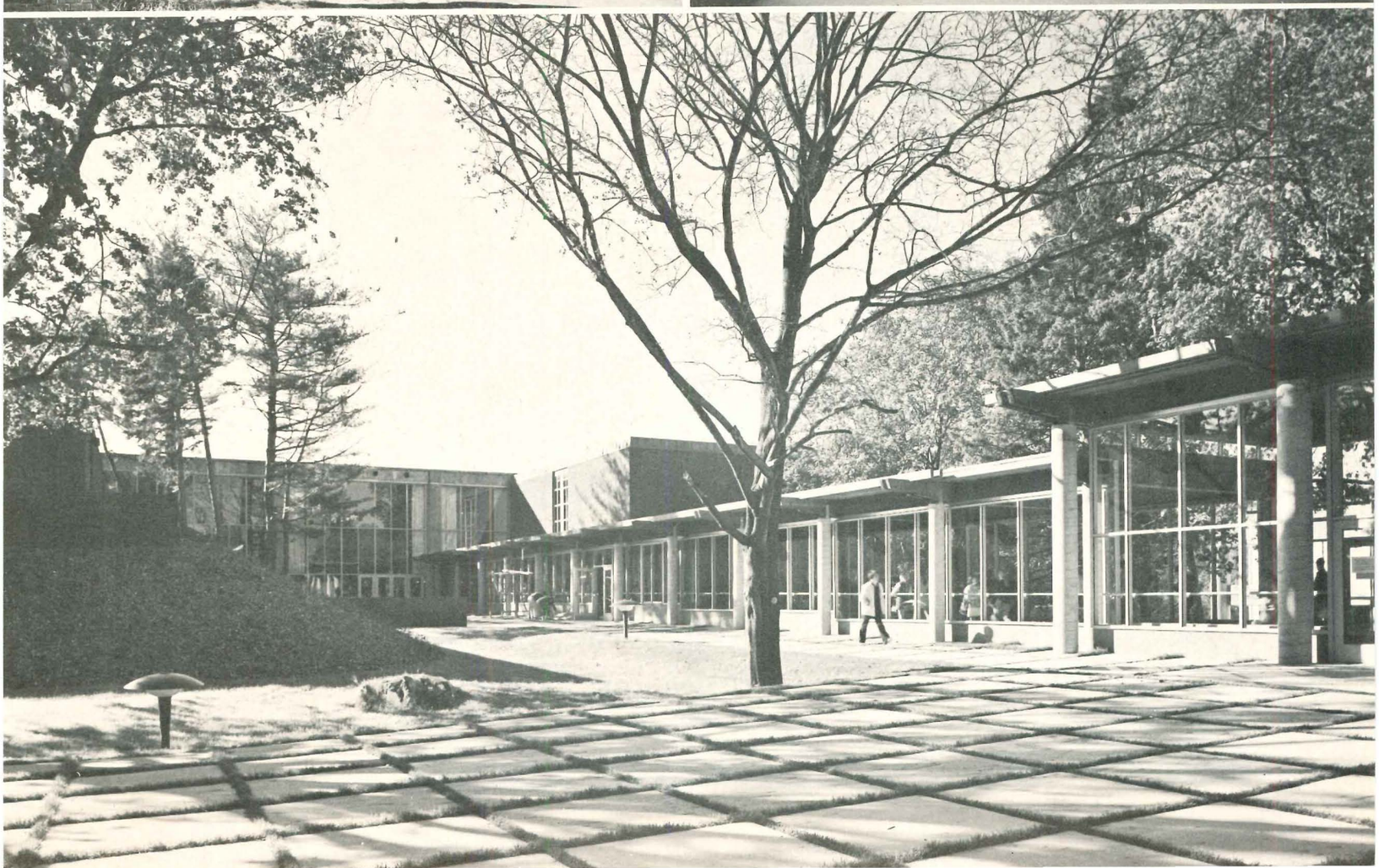
GREENWICH HIGH SCHOOL, Greenwich, Connecticut. Architects: *Reid & Tarics Associates, John Lyon Reid, partner in charge; Charles F. Schrader, project architect; Robert F. Olwell, project designer.* Engineers: *Dr. Alexander G. Tarics,* structural; *Storch Engineers,* foundation; *Joseph R. Loring and Associates,* mechanical/electrical. Consultants: *Dariel Fitzroy,* acoustics; *McKee, Berger & Mansueto,* cost. Landscape architects: *Peter G. Rolland & Associates.* Contractor: *Peter J. Carlin Construction Co.*

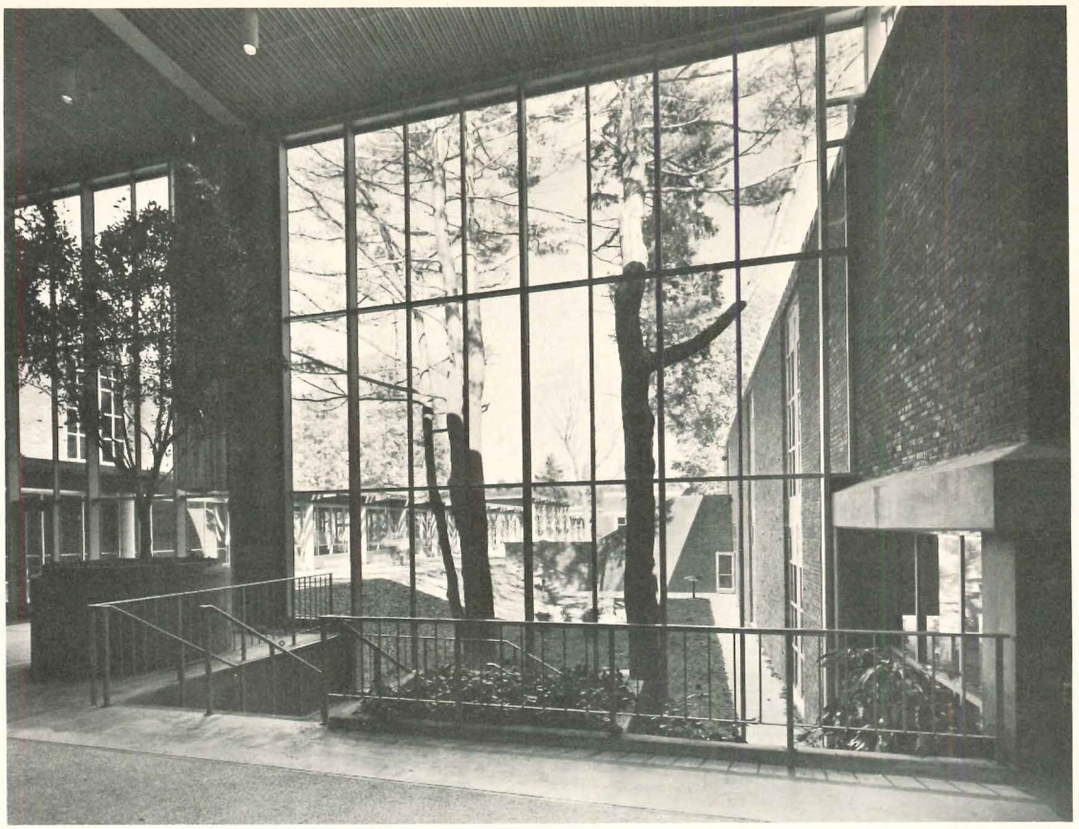


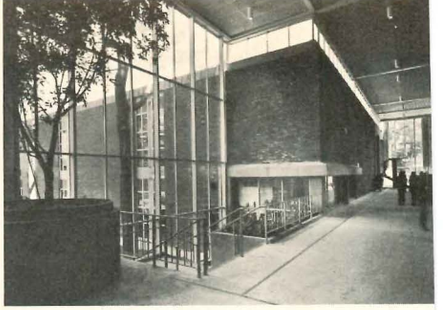
Greenwich High School is designed for and well-suited to today's educational, technological and functional needs, but because of its acoustical treatment and built-in flexibility, it is adaptable to changes for future needs. What marks it as esthetically exceptional, however, is the quality of its site and building design. The natural pond, for instance, is a rare natural resource for a high school and has been treated as such an asset. All buildings are oriented away from it with only the science department opening toward it. The pond is a place apart, both a refuge for animal and plant life and a special means for studying biology. Other natural features were equally influential in siting and in creating the character and quality of the campus. Even the parking areas adjacent to facilities used also by the community (auditorium, stadium, gym) are pleasant assets. Inside and out, the glasswalled gallery (opposite) is a visually pleasing experience.

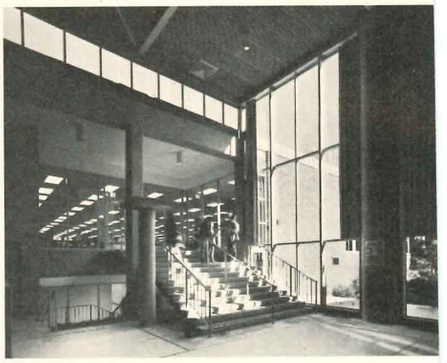


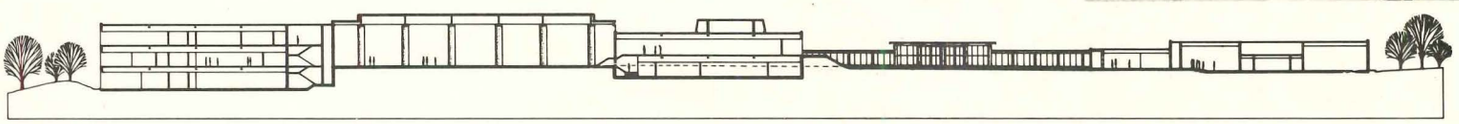






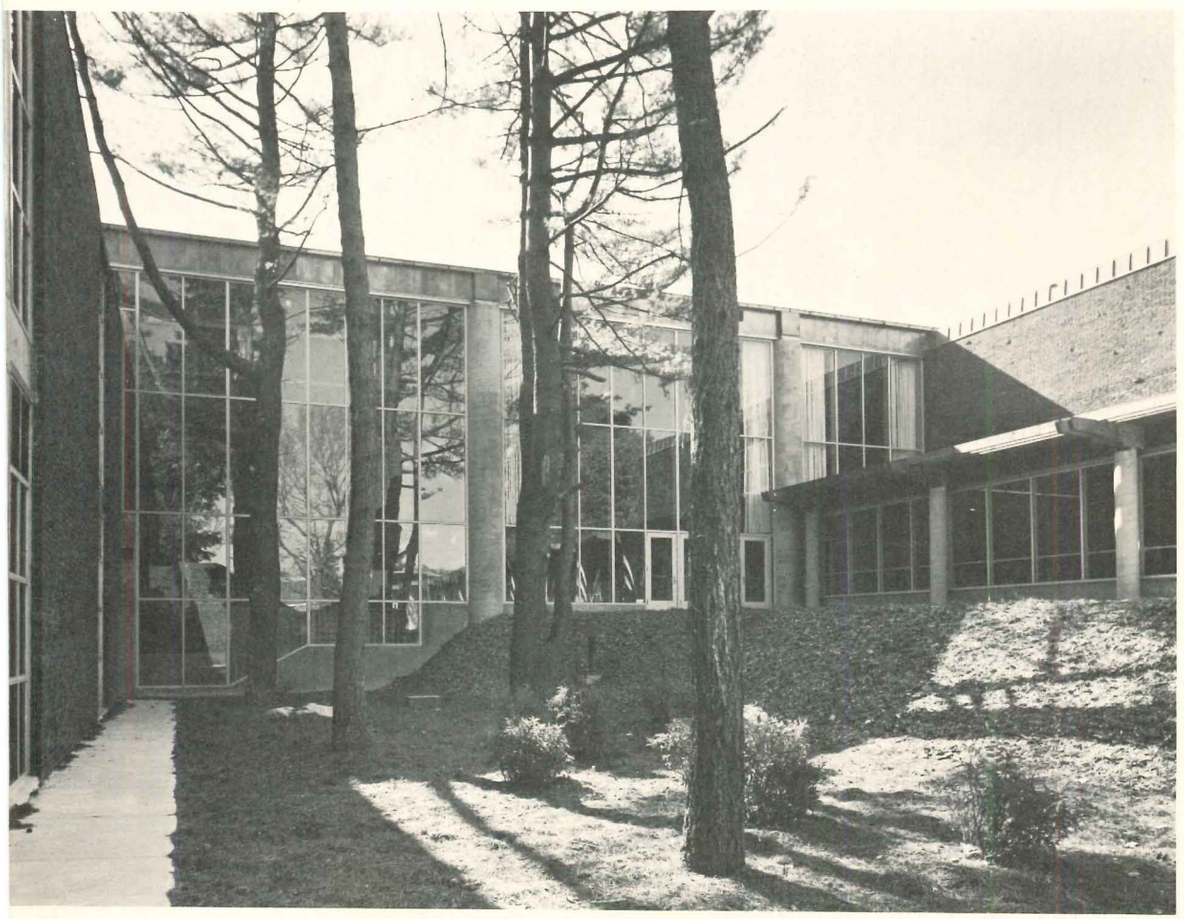




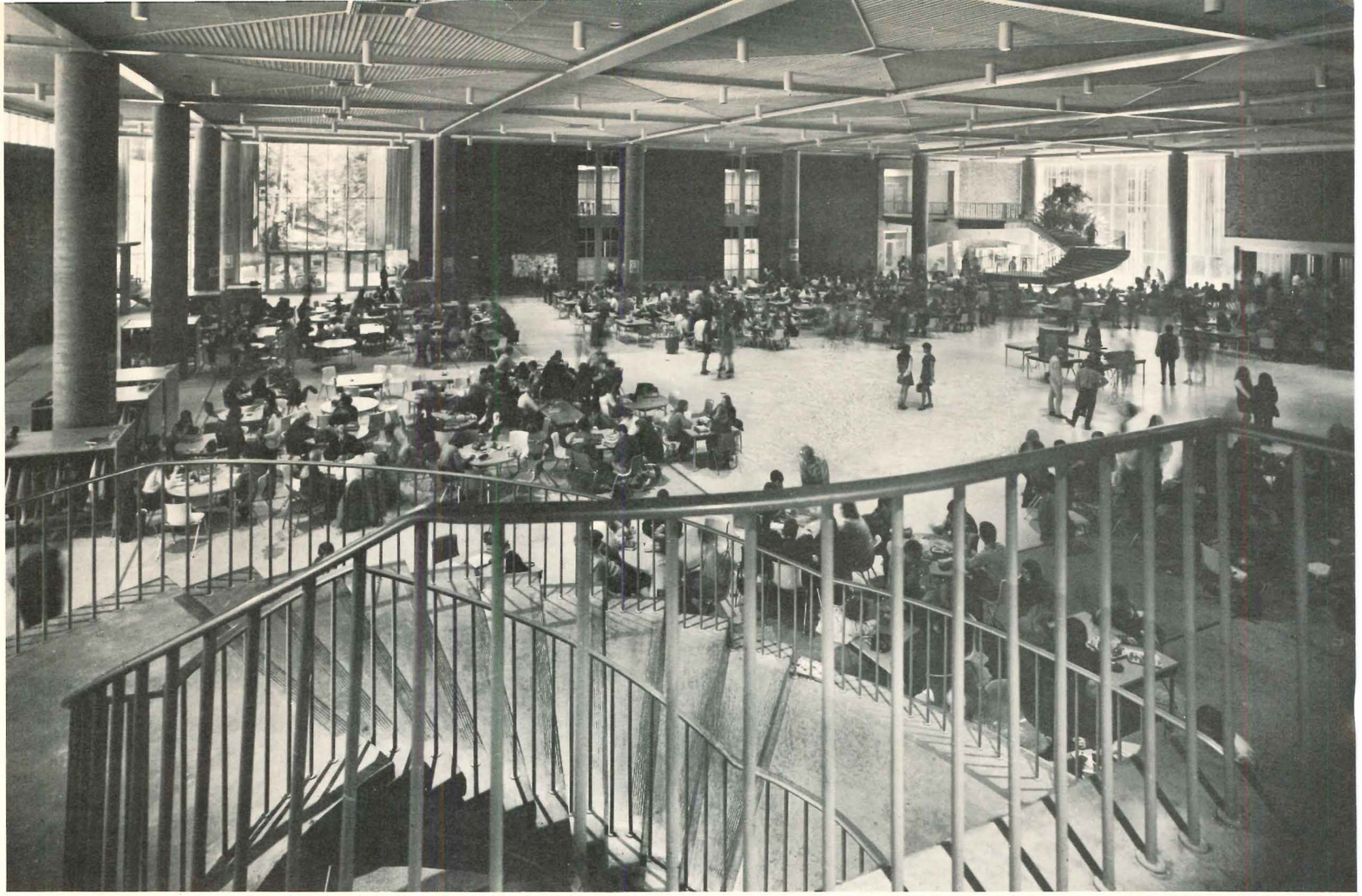


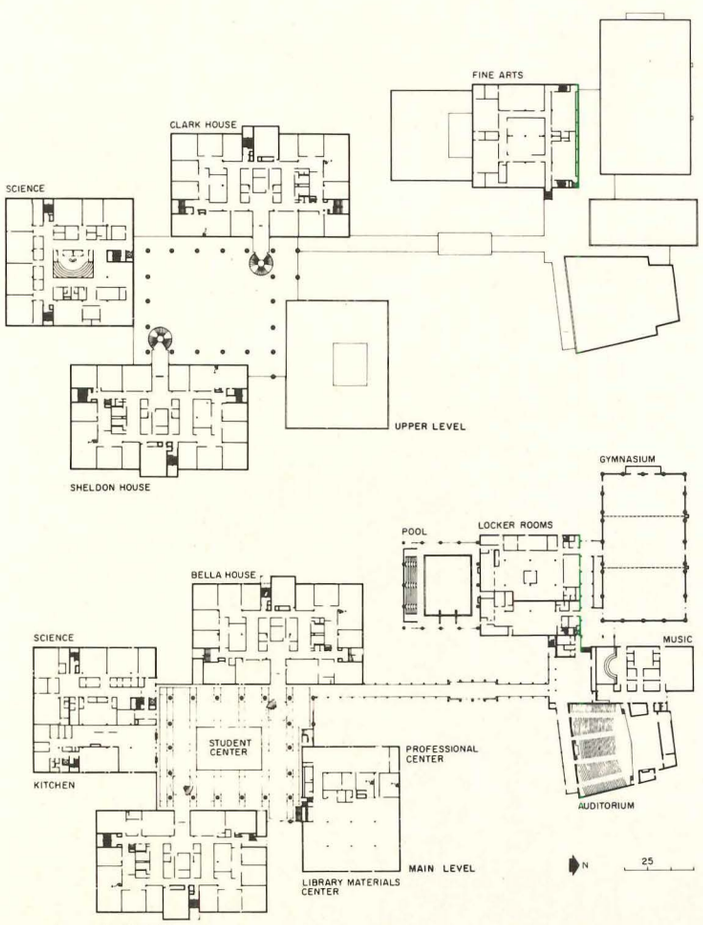
ACADEMIC GROUP

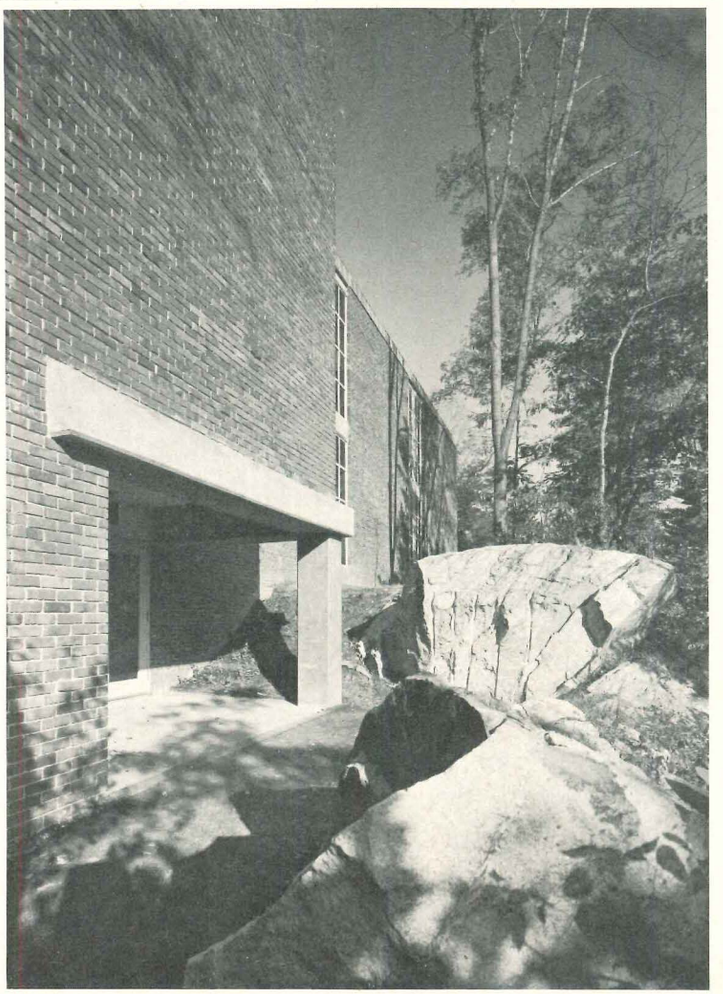
P.E.-ARTS GROUP



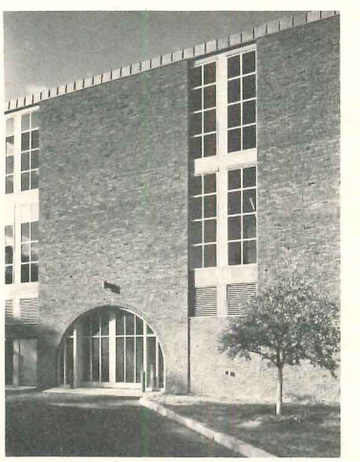
The focal point of all student activity is the student center, a vast open area with a 2,000-seat capacity. It is the principal means of student circulation in the academic area, but it is also dining area, assembly area, a place for school social events, meetings, rallies, concerts and public functions as well. It is acoustically designed for lively activity and there is no lack of this among the 2,750 students who come together in the center from their various "house" assignments (permanent for the three years of high school). Here they are "student-citizens" of the entire school, in contrast to their small "house" groups. The school's four academic buildings, acoustically designed as quiet areas, enclose the center except at corners where window walls open it to visual and spatial relationships with other parts of the campus: the court between gallery and administration building (left and above); the corridor leading to library steps (above); stairs down to offices.




FINE ARTS
CLARK HOUSE
SCIENCE
UPPER LEVEL
SHELDON HOUSE
GYMNASIUM
POOL
LOCKER ROOMS
BELLA HOUSE
SCIENCE
MUSIC
STUDENT CENTER
PROFESSIONAL CENTER
KITCHEN
AUDITORIUM
MAIN LEVEL
LIBRARY MATERIALS CENTER
N
25
FOLSOM HOUSE



In scale, color and materials, the buildings fit naturally into their surroundings. Exterior materials—brick, concrete and wood, and a special alloy metal used to cap the brick walls—have a happy consonance with local tradition and also require little upkeep. The metal ages to a rich deep gray that picks up purple tones from the reddish brown brick. Simple details such as the concrete post and lintel at a minor doorway (left), the service road along the creek and the bridge (above) leading to wooded sport areas, and the arched openings in the industrial arts building (below), unselfconsciously create vistas of unexpected charm.



Innovative engineering leads to new stadium designs

by Hannskarl Bandel, partner, Severud Associates, consulting engineers

A number of new stadiums have been built, planned, or projected recently for some compelling reasons: old ones don't work well for multi-sports use; parking is lacking; television adds new requirements; sports leagues have expanded; more inducements are needed to attract spectators. While these stadiums are modern in many ways, the author suggests that novel engineering could improve both the function and the economy of future stadiums.

From the spectator's standpoint, the most important requirements for a sports stadium are that he be able to see as much of, and be as close to, the activities on the field as is possible.

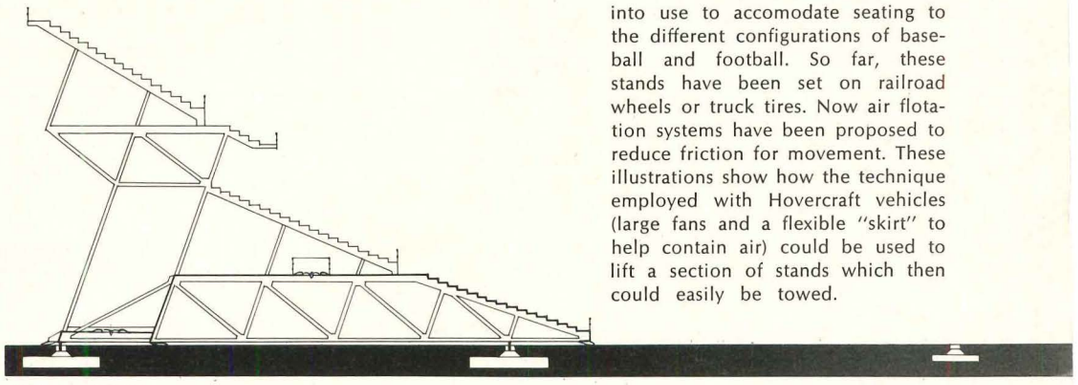
Because the modern sports stadium must serve the needs of both baseball and football, designers have had to find means for moving the lower seating areas to change the arrangement from a baseball to a football configuration. Generally, the structure for the lower seats has been set on wheels—sometimes the wheels ride on railroad tracks; in other cases seating has been divided into maneuverable sections and set on truck wheels. Such arrangements can be both expensive (initial cost) and time-consuming. The first-mentioned seat-moving arrangement has been employed with the conventional circular stadium. The second technique has been used with the stadium which uses a geometry called the "super circle" (a shape somewhere between a square and a circle). With such a shape, shorter sight lines are achieved for football than with a circular stadium.

It is possible, however, to develop an expandable, elliptical stadium configuration (see following page) which optimizes the sight-line distance for both football and baseball. With this approach, only one movable section of seats is utilized which makes a simple linear movement inward or outward.

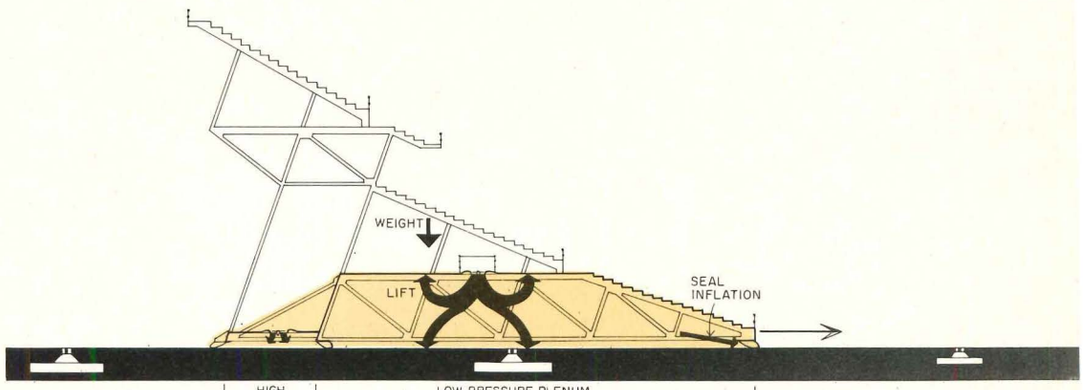
Our investigations have led us to believe that the best moving system for such structures would be the air plenum and air flotation principle that is used for Hovercraft vehicles (photos opposite).

The use of this type of air-flotation system for a stadium is very natural because

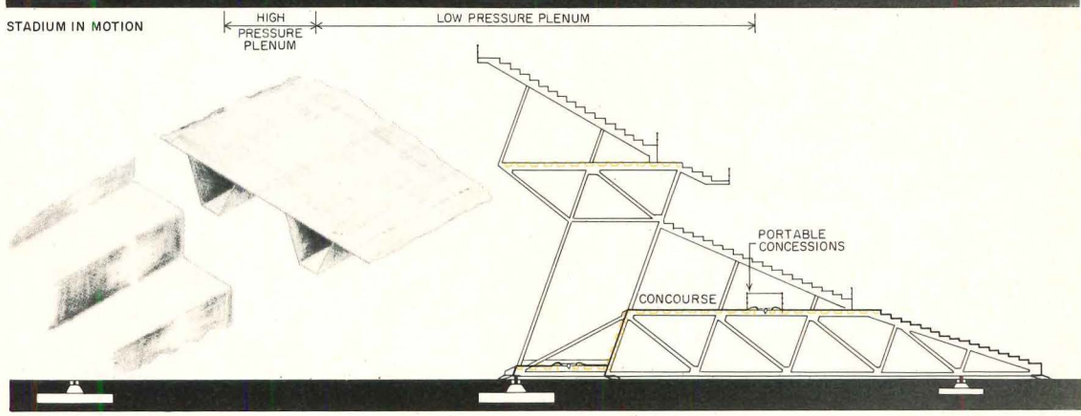
Movable stands have recently come into use to accomodate seating to the different configurations of baseball and football. So far, these stands have been set on railroad wheels or truck tires. Now air flotation systems have been proposed to reduce friction for movement. These illustrations show how the technique employed with Hovercraft vehicles (large fans and a flexible "skirt" to help contain air) could be used to lift a section of stands which then could easily be towed.



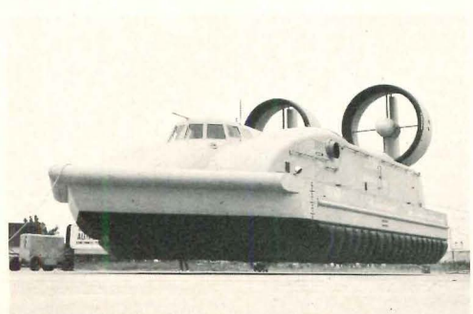
BASEBALL POSITION

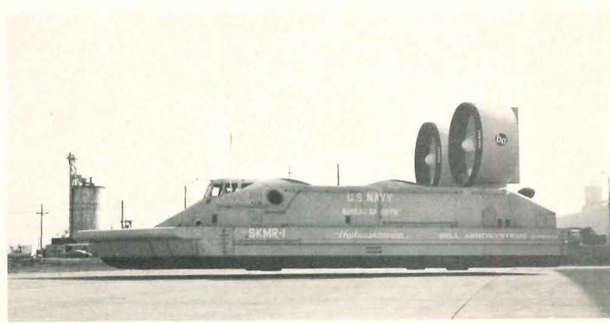


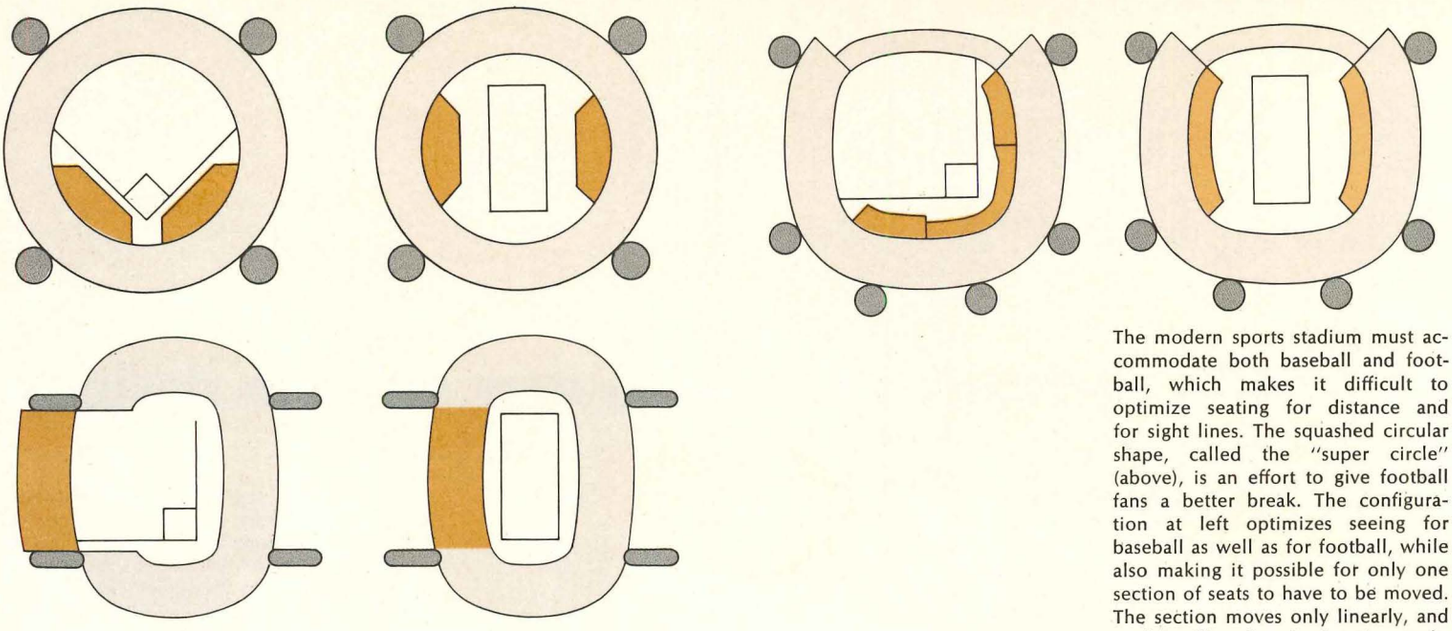
STADIUM IN MOTION



FOOTBALL POSITION



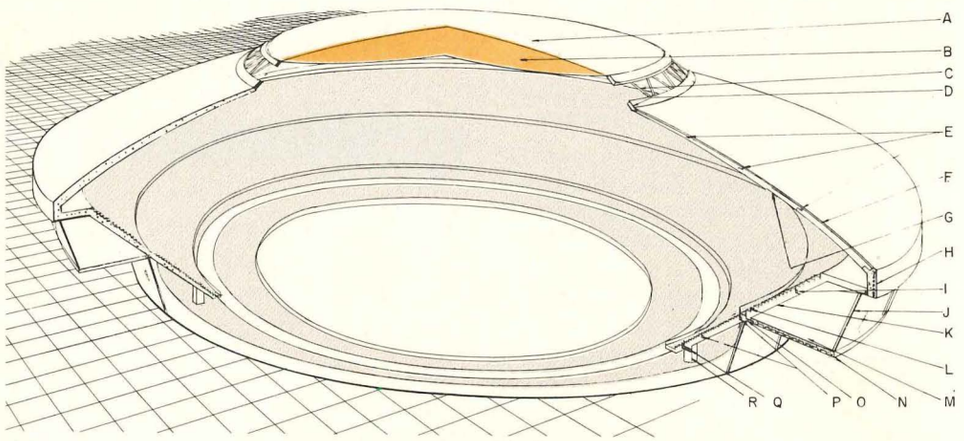


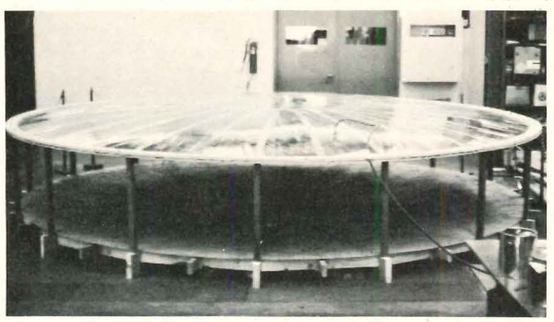


The modern sports stadium must accommodate both baseball and football, which makes it difficult to optimize seating for distance and for sight lines. The squashed circular shape, called the "super circle" (above), is an effort to give football fans a better break. The configuration at left optimizes seeing for baseball as well as for football, while also making it possible for only one section of seats to have to be moved. The section moves only linearly, and could utilize the air flotation technique shown on the previous page.

a large plenum is automatically created by the lower seating, the lower concourse, and the back-wall enclosure. It would be possible to move the structure without any tracks or friction over any kind of surface—pavement, dirt, or natural or synthetic turf. Because of the extremely low pressure utilized (in the range of 50 psf) the system would have a very low power requirement; and, because of the large air reservoir, it would be insensitive to irregularities or cracks in the underlying surface.

In order to keep the pressure as low as possible to enhance the economics, careful attention must be paid to the detailed design of such a movable stadium. Weight should be minimized as much as is practicable. For example, toilets and permanent concessions should be moved to adjacent, non-movable structures. High-strength steels should be employed for the framing and lightweight principles used in bridge design—such as orthotropic decks and folded plates—should be considered.





A. stainless steel skin
B. compressed air
C. steel stiffening truss
D. precast concrete compression ring
E. steel compression-tension ring
F. precast slab elements
G. precast ribs (90)
H. post-tensioned precast tension ring
I. steel tension ring
J. hangar-mullion
K. precast beam-column seat supports
L. precast seating
M. glass-encased concourse
N. precast waffle slab elements on precast edge beam
O. precast tension ring
P. steel tension ring
Q. precast compression ring
R. cast-in-place column and footing

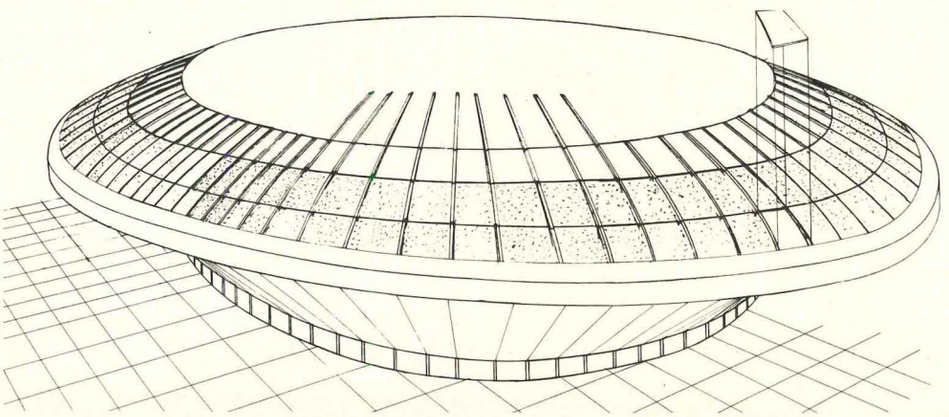
This proposed design utilizes precast concrete elements for the "cone" section and cantilevered portion of the roof. Center of roof is an inflated stainless steel "pillow." Model of similar structure is above.

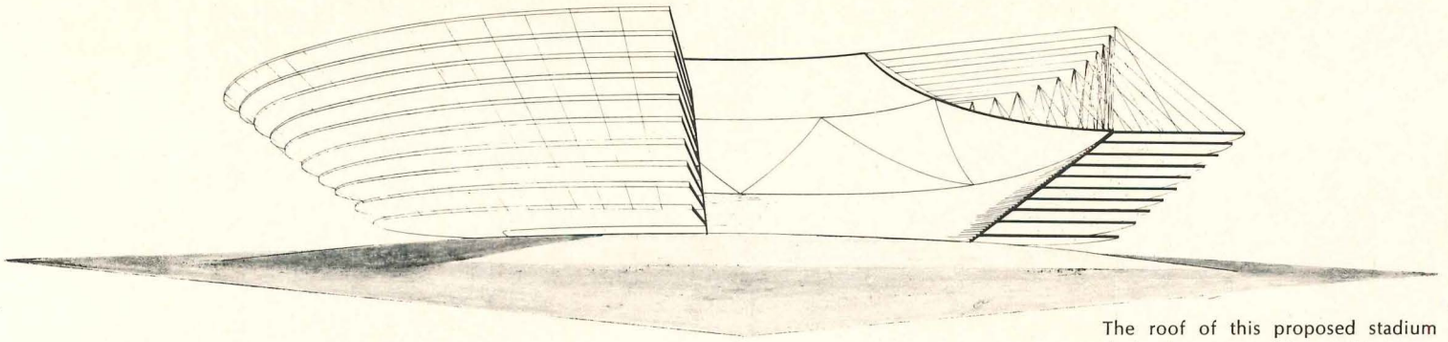
New ways to economically roof over and enclose the sports stadium

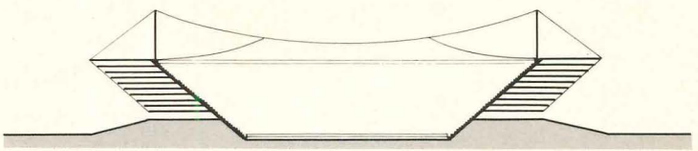
There is no question that in the future many sports stadiums will be fully enclosed and air conditioned. Because of the gigantic dimensions of stadium roofs, the structural engineer needs to look for techniques that will economize the roof system. One such approach is as follows:

The cone forming the upper seating and the side roof would be most economical if it were designed as a composite structure, using high-strength precast concrete members for all compression elements (ribs) and shear plates and high-strength steel hoops for all tension members. It would be possible to construct the cone of the seating and the returning canopy roof without scaffolding—precast elements are put up in self-supporting tiers.

In order to reduce weight and to cut



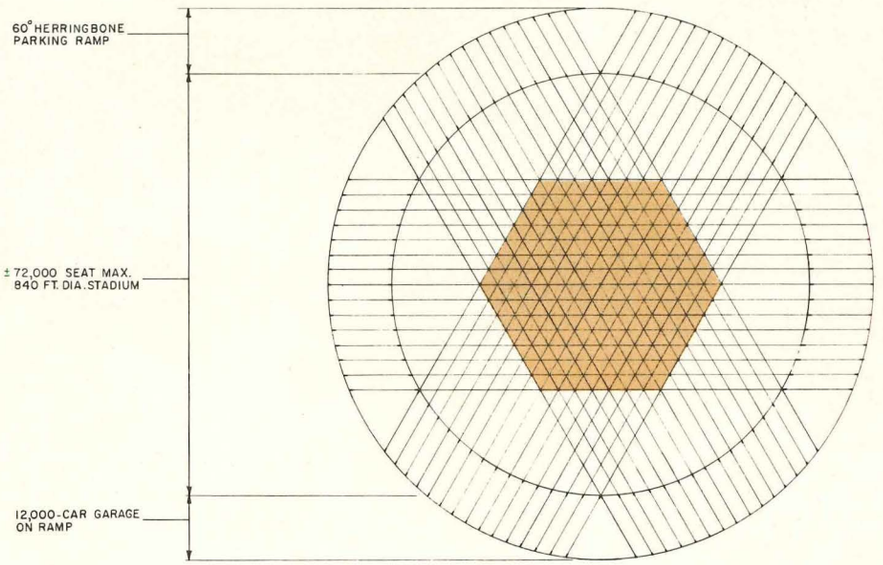




The roof of this proposed stadium design is supported by a cable structure of unusual configuration. The cables are stretched from one side of the compression ring to the other in three directions forming a criss-cross pattern. This avoids the need for a tension ring, and thus the number of cable connectors is approximately halved—an appreciable saving in cost. The weight of the roof, cables and the live load is counterbalanced by the weight of parking ramps on the exterior.

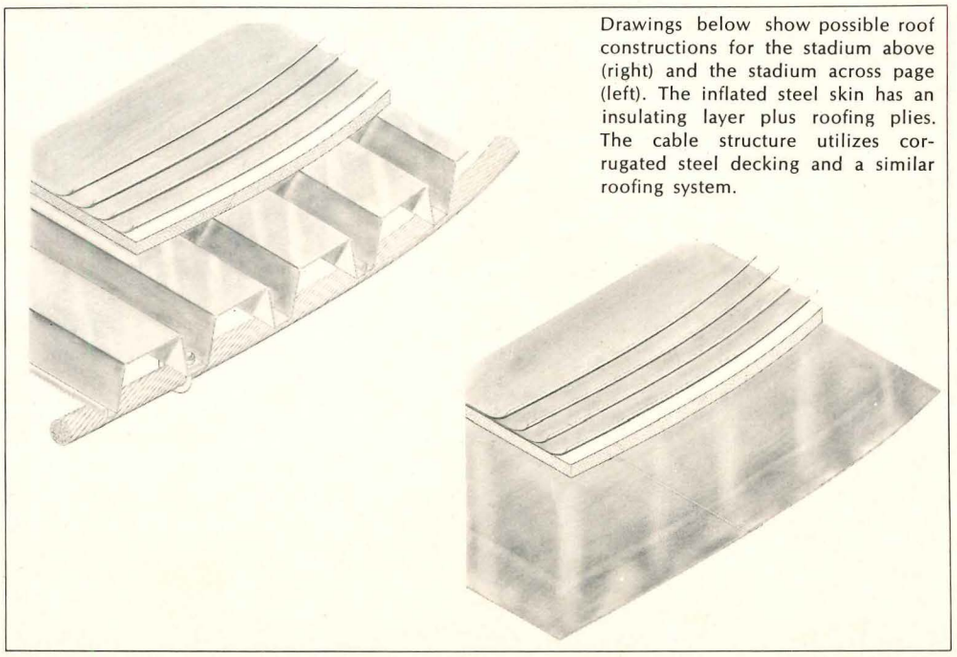
down on the total enclosed air volume that is created by a full dome, we propose that the closure could be economically made by an air-inflated stainless steel pillow. The weight of such a suspended pressure-stabilized structure (the stainless steel skins would be taut) would be approximately 1/10th that of a conventional steel dome. If air pressure were lost, the structure would still remain sound. Purpose of the pressurization is to make the skins stable with respect to wind (e.g., in the case of a cable structure, the cables have to be tied down, weighted, or dampened).

Another approach to enclosed stadium design utilizes a three-directional cable net as the roof that is kept in tension by means of the dead weight of a spiraled parking structure.

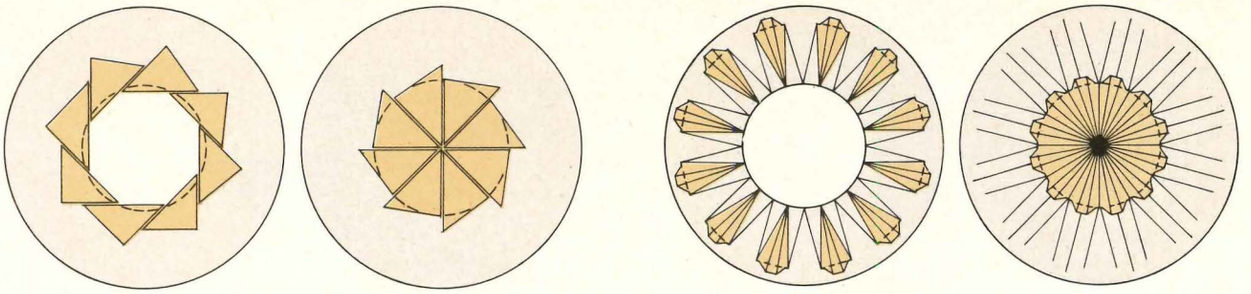


Three different ways of providing a movable roof

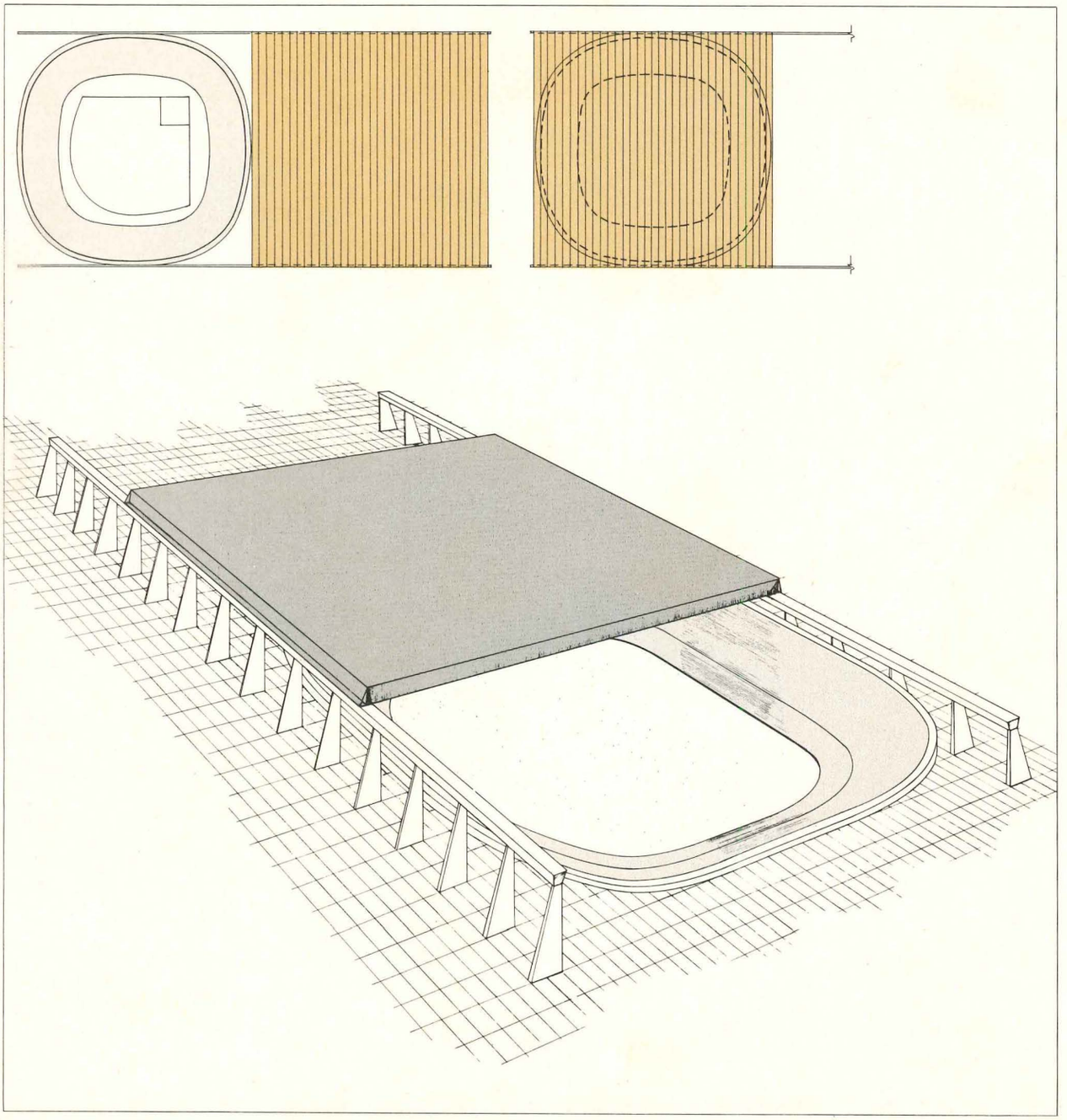
In spite of the fact that they add in the neighborhood of 10 per cent to total cost of a stadium, movable roofs have intrigued entrepeneurs and designers alike. We have worked with various principles, always emphasizing simplicity of movement in order to guarantee faultless functioning of the mechanism. The illustrations on the next page show a sliding pie-shaped roof, pieces of which slide up and down on the dome surface. These arrow-like pieces would be constructed of aluminum folded plates in order to reduce the load. Another approach employs twisting elements that close like a camera shutter. We feel, however, that the most economical system would be a metal stressed-skin roof which is strengthened by post-tensioned cables, and which slides on a compressed-air track. This roof has a distinct advantage over an arch-shaped movable roof because the arch requires a much larger span in order to achieve the required height at the top of the stands; and, further movement must be made under arch reaction.



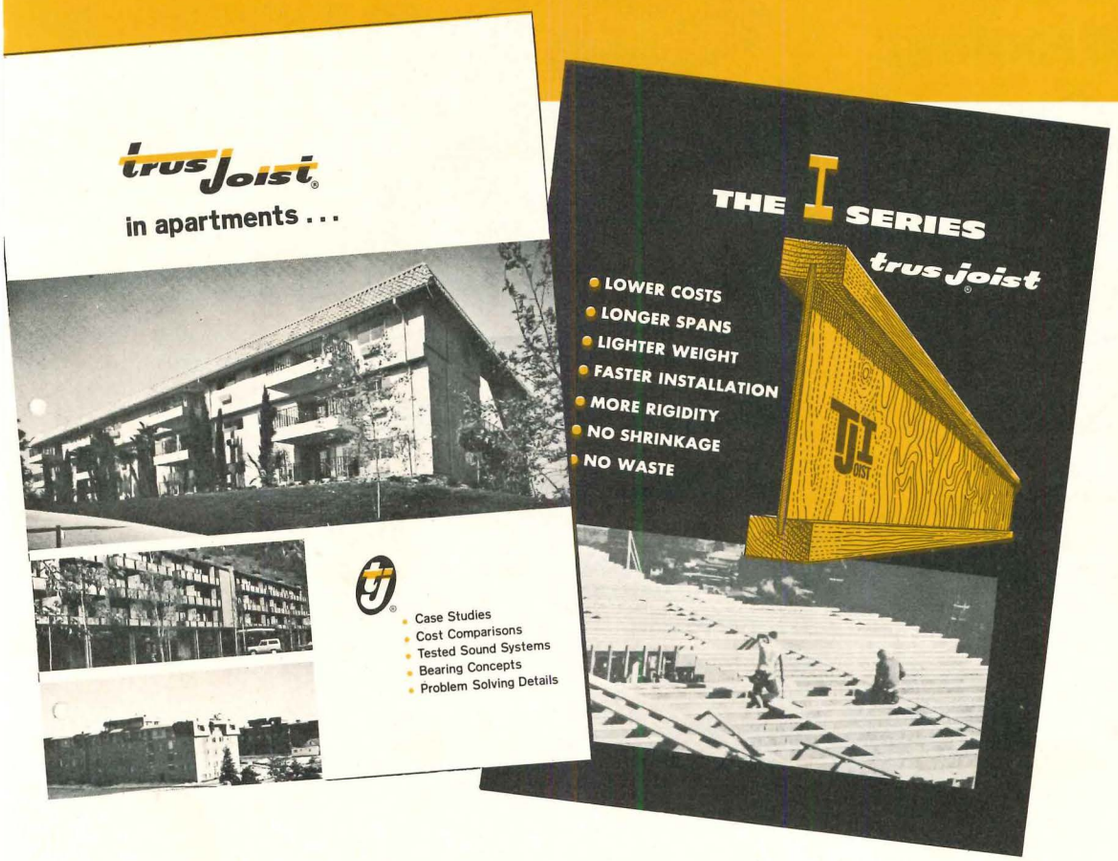
Drawings below show possible roof constructions for the stadium above (right) and the stadium across page (left). The inflated steel skin has an insulating layer plus roofing plies. The cable structure utilizes corrugated steel decking and a similar roofing system.



Occasionally, movable roofs have been considered for stadiums to open them when the weather is good. The schemes shown here include: 1) a system that works like a camera shutter (above, left); 2) a system with arrow-shaped roof panels that slide over the perimeter roof to close the center (above, right); and 3) a post-tensioned steel stress-skin flat roof (below) that does not enclose the stadium, but provides shelter over the playing field. It is proposed that the flat roof slide on a compressed air track to minimize friction.



No Architect Who Is Involved In Apartment Design Can Afford To Be Without These Two Books



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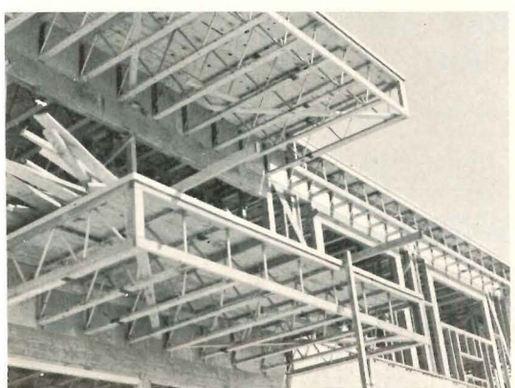

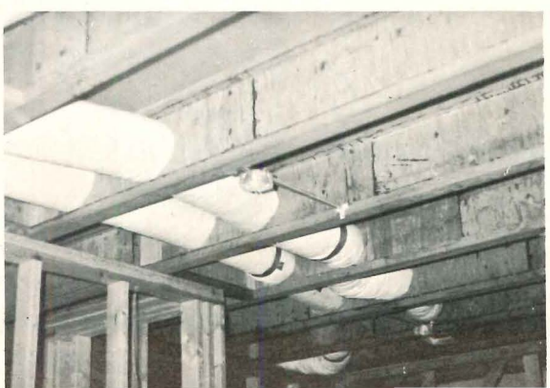

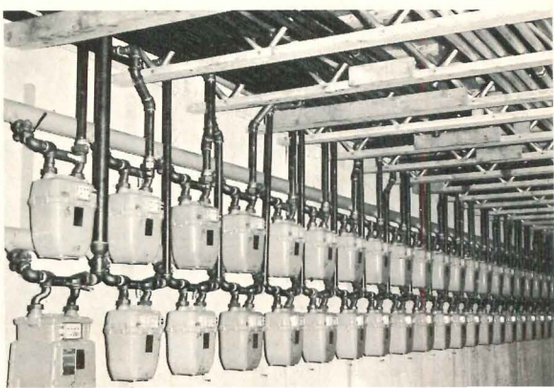

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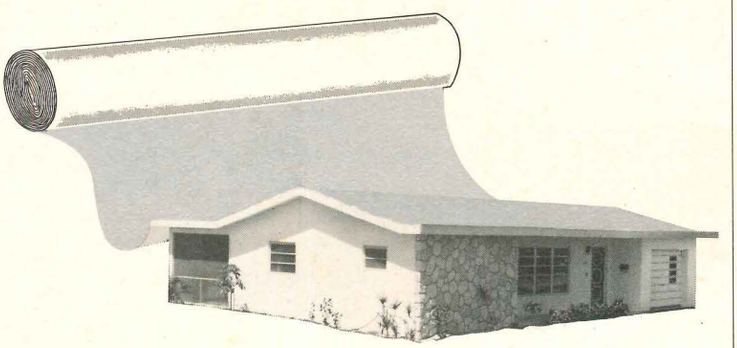

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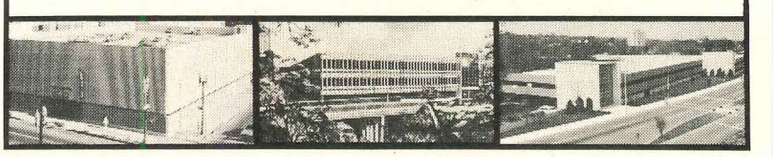

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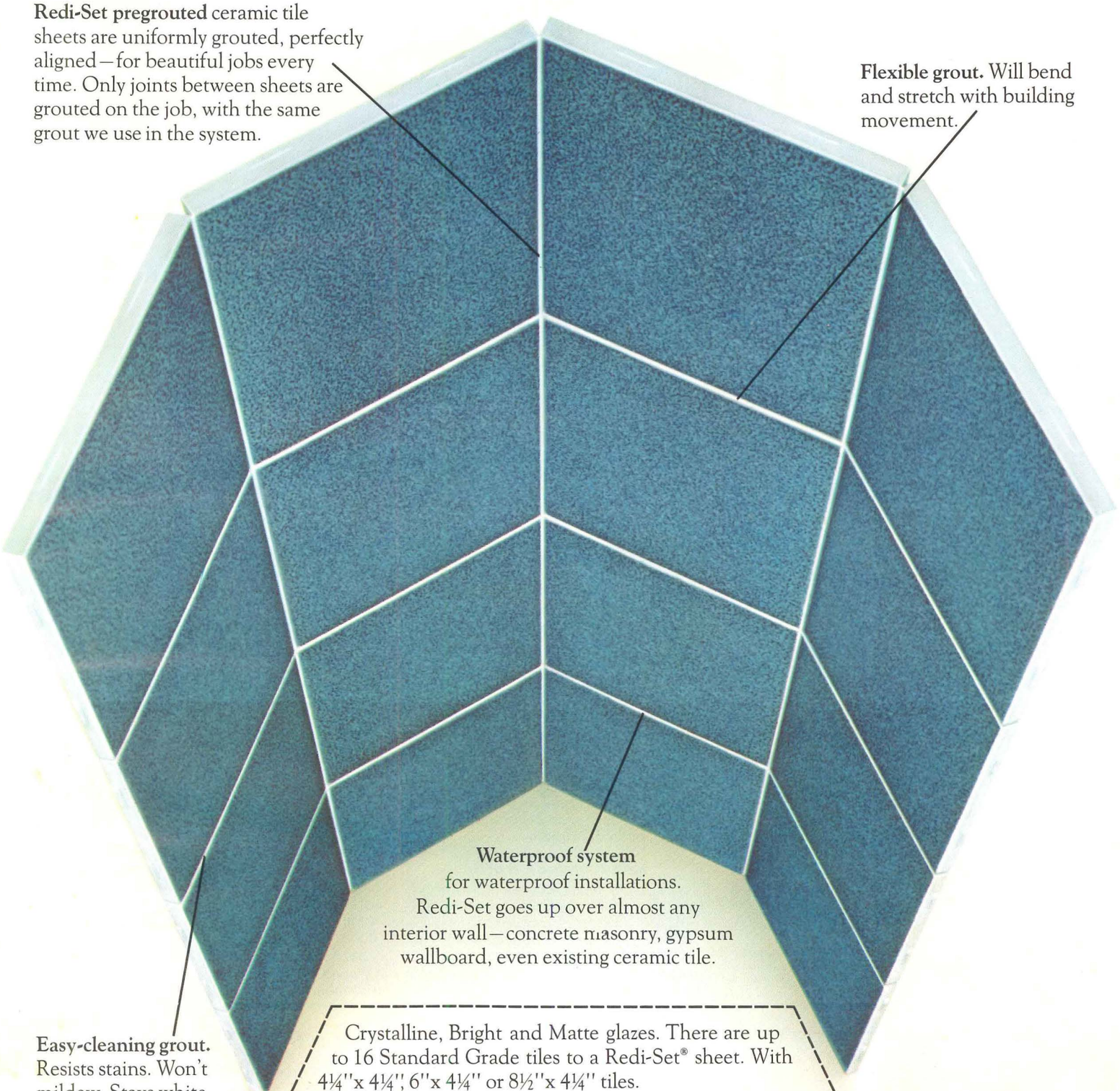

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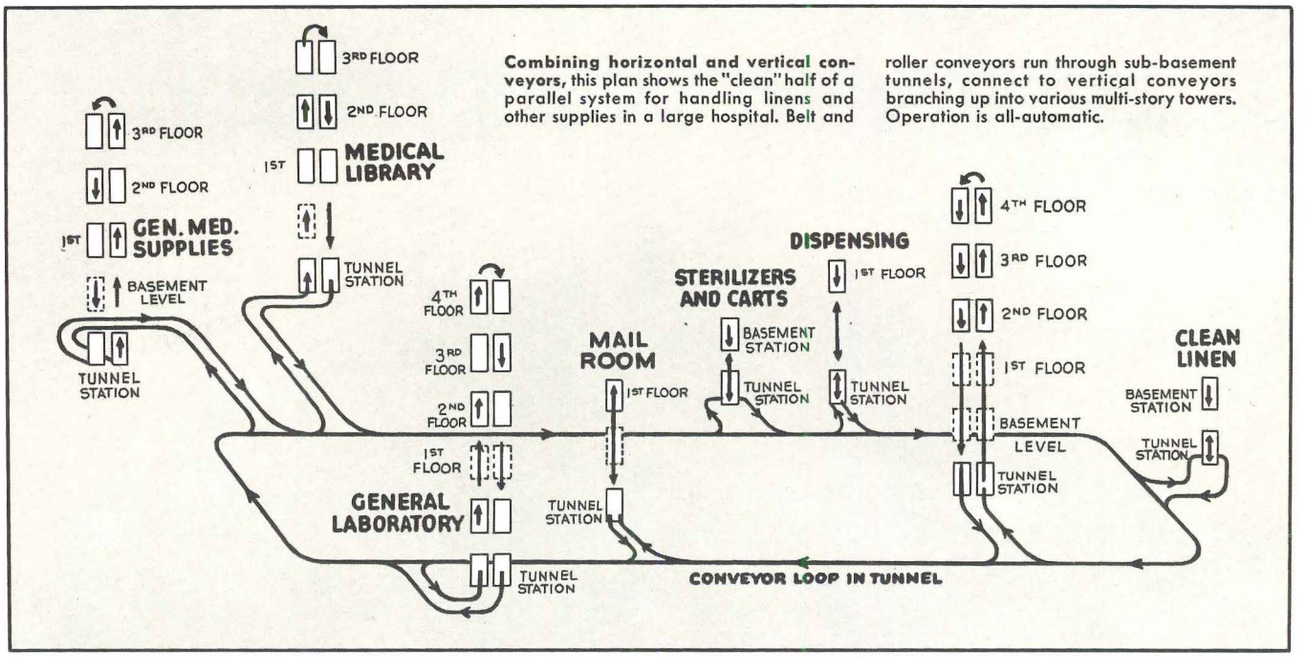
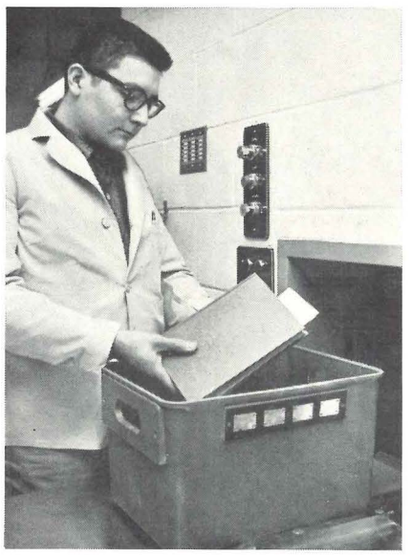


Combining horizontal and vertical conveyors, this plan shows the "clean" half of a parallel system for handling linens and other supplies in a large hospital. Belt and roller conveyors run through sub-basement tunnels, connect to vertical conveyors branching up into various multi-story towers. Operation is all-automatic.

Pushbutton conveyor system speeds hospital supplies to any of 17 stations



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Widely used in office buildings, banks, libraries, etc., *Recordlift* Systems have long proved ideal for handling hospital supplies.

The plan above, for example, shows the "clean" portion of an extensive double *Recordlift* System being designed for a new 700-bed hospital.

Has two-lane traffic

Two separate horizontal-vertical conveyor systems will run side-by-side throughout the building complex. One will handle clean linen; the other, soiled. The systems will also handle mail, books, records, forms, publications, medical supplies, instruments and lab specimens.

There are 17 pushbutton stations on the clean system, 14 on the soiled. The entire double system has about 4,300 feet of conveyor—3,000 feet horizontal. The vertical footage includes 8 *Recordlifts* and 12 reciprocating lifts.

Provisions are included for adding 7 more stations to the clean system and 8 more to the soiled.

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Any station can send to any other station in each separate system. For reasons of cleanliness, the two systems do not connect at any point.

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Unitary carpet backing and hot melt adhesive system improve carpet performance and appearance

1

5

2

6

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7

A non-woven carpet backing material which eliminates the need for secondary backing, and a hot melt system of bonding the fiber to the primary backing, are two recent developments in carpet construction which reportedly result in improved carpet quality.

The primary backing, made of spunbonded polypropylene, is said to provide tufted carpets with the dimensional stability and strength required without secondary backing. Cut edges are non-raveling, and carpet sections can be joined with minimum seam visibility.

Glue-down installation techniques using alcohol- or emulsion-based glues work particularly well with unitary backing, the manufacturer reports. Carpets are cut, rolled out, overlapped, rolled back, and adhesive applied (photos 1, 2, and 3). Adhesive is applied to edges, and two edges are butted, leaving an invisible seam (photos 4, 5, and 6). The balance of the carpet is installed (photo 7).

The new bonding system, based on the company's hot melt polymers, is said to provide stronger tuft anchorage and backing bonds, virtually eliminating delamination. The system is not limited to single-backed carpet applications; it can be used with all types of carpet constructions. ■ E.I. DuPont de Nemours & Co., Wilmington, Del.

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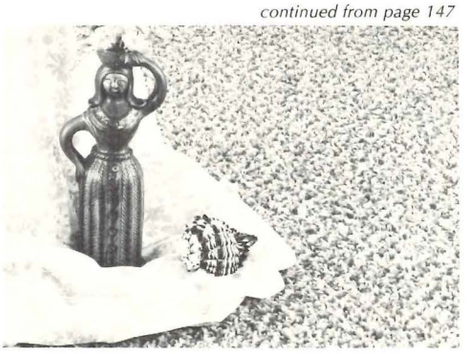
more products on page 148

continued from page 147



CARPETING / Suited for motel rooms as well as private interiors, this tri-color shag is made of two-ply continuous filament nylon. ■ C.H. Masland & Sons, Carlisle, Pa.

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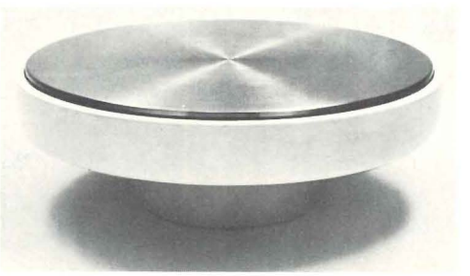


COCKTAIL TABLE / Aluminum top ringed by a butyl seal is supported by a white fiberglass base. ■ Vecta Contract Co., Dallas.

Circle 302 on inquiry card

REDWOOD PATIO DECK / Preassembled units simplify installation and permit rearrangement or complete relocation with minimum effort. ■ Georgia-Pacific Corp., Portland, Ore.

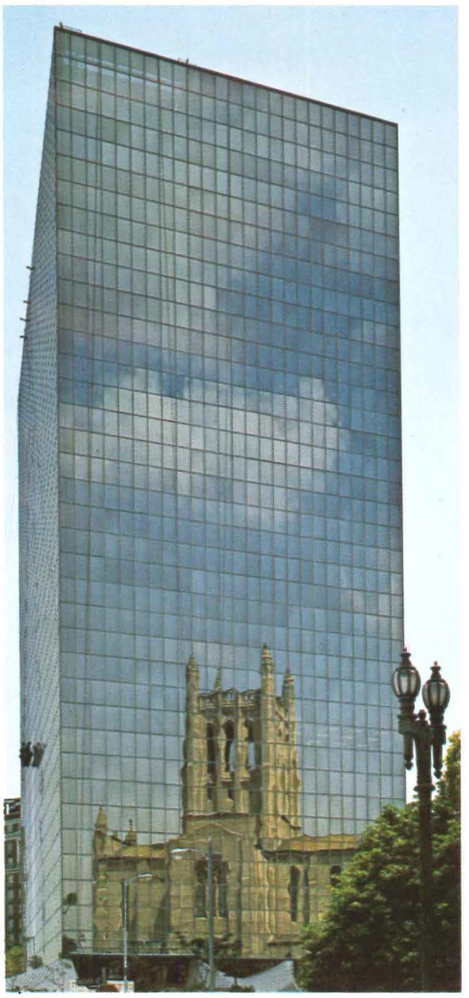
Circle 303 on inquiry card

STUDY CARREL / Standard equipment includes bookshelf, lighting fixture extended full length of shelf, and built-in raceways for wiring. ■ Audio Visual Products, Inc., Wichita, Kan.

Circle 304 on inquiry card

more products on page 158

PPG PRESENTS A FAMILY OF REFLECTIVE GLASS THAT GIVES YOU THE DESIGN, COST & PERFORMANCE OPTIONS YOU NEED.



Now PPG can give you a complete family of environmental glass products. With a wide range of performance options. In a variety of muted warm and neutral gray tones.

Any one of them can help you create a better, more beautiful building. Because every one of them improves visual comfort by reducing the sun's glare, reduces heat buildup from solar radiant energy, reflects the building's environment and provides a dramatic esthetic statement.

Their muted shades are designed to complement your building design—not overpower it.

One of them will fit into your scheme of beauty, practicality, comfort and cost.

On the following pages, you can take a closer look at each of these environmental glasses, glazed in some of this year's important buildings.

By all means, look into a PPG Environmental Glass for your next building. Early in the design stages.

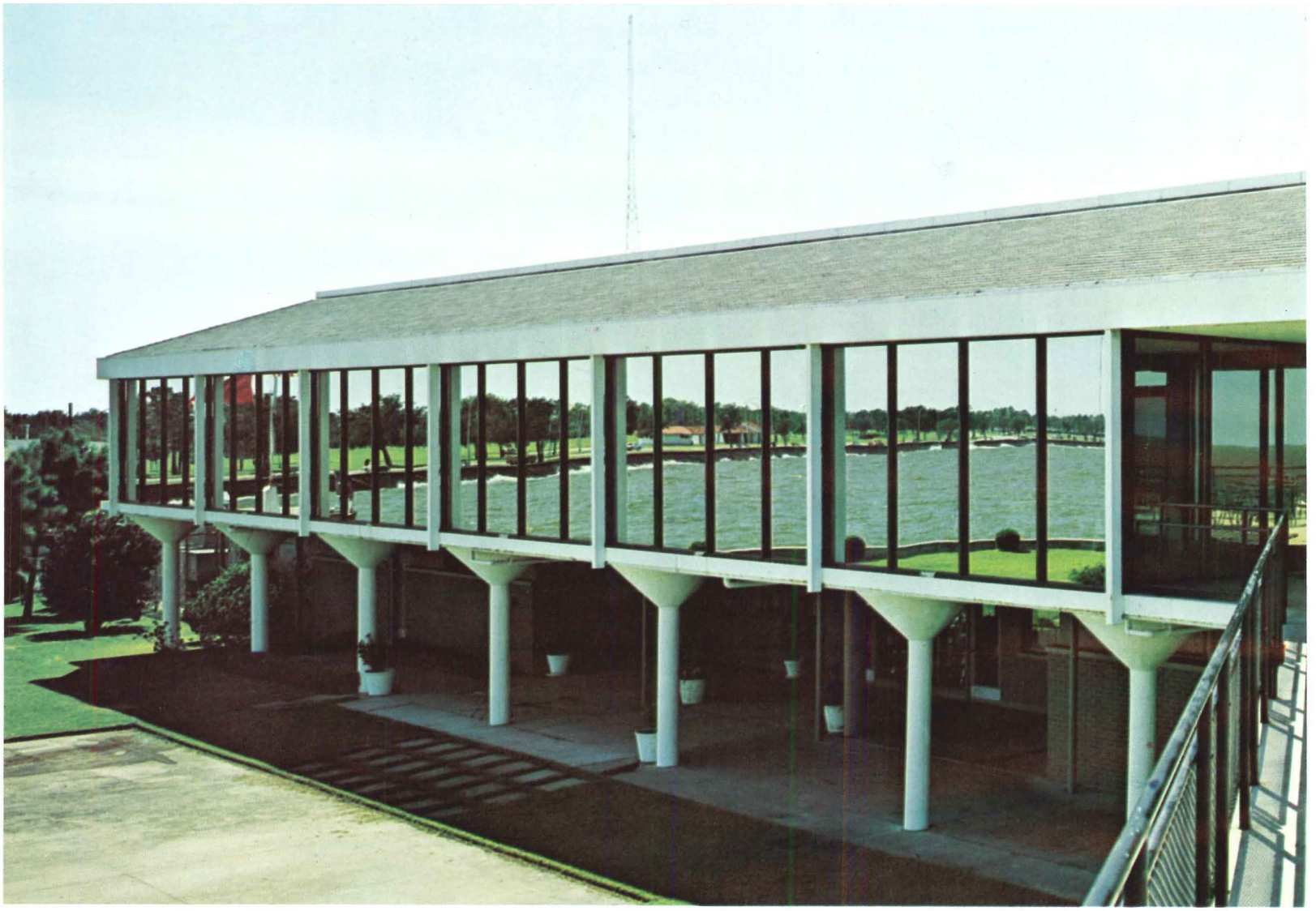
Contact your PPG Architectural Representative or write us. PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

PPG INDUSTRIES

SINGLE GLAZING

PPG SOLARCOOL™ BRONZE GLASS

THE WARM-TONED LIGHT- AND HEAT-REFLECTIVE GLASS THAT DOESN'T COST A LOT.



The Southern Yacht Club:

visual comfort and a dramatic facade at moderate cost.

The architects for this mild-climate club chose PPG's *Solarcool Bronze* Glass for these reasons: Its high reflectivity would bring unique beauty and warm tones to their building's facade. Occupant comfort would be increased because the Glass' coating significantly reduces solar brightness.

And even though it is moderately priced, its performance can reduce mechanical equipment requirements.

OWNER: The Southern Yacht Club, Inc., Lake Pontchartrain, La.
ARCHITECT: Curtin & Davis, New Orleans, La.
PPG GLASS: *Solarcool Bronze* Glass

PPG INDUSTRIES

PPG LHR® GLASS

THE LIGHT- AND HEAT-REFLECTIVE GLASS FOR BEAUTIFUL REFLECTIONS AND A BEAUTIFUL RETURN ON INVESTMENT.

The Westinghouse Nuclear Center:

a changing facade and a comfortable working environment.

The design architect, working with Westinghouse Nuclear Energy Systems and Westinghouse Corporate Design Center, selected PPG's *LHR Solargray* Glass because its use results in a facade that changes as often and dramatically as the sky tones and clouds; and a comfortable environment for a large population of highly skilled men and women. "It is also the most practical, maintenance-free, economical cost-per-square-foot material available to do the job."

OWNER: Westinghouse Electric Corporation, Pittsburgh, Pa.
ARCHITECT: Deeter Ritchey Sippel Associates, Pittsburgh, Pa.
PPG GLASS: *LHR Solargray* Glass

The Westcoast Building:

a graceful, live exterior.

The architects of this office building wanted a lively, dramatic-looking structure. They selected PPG's mirrorlike *LHR Solarbronze* Glass to reflect the surrounding mountains, sky and harbor. The result is a beautiful, ever-changing facade that brings visual excitement to downtown Vancouver, even during periods of rain and fog. In addition, the bright tones of the Glass complement the concept of structural "lightness" in the building's cable-suspension design.

OWNER: Westcoast Transmission Company Limited, Vancouver, B.C.
ARCHITECT: Rhone & Iredale, Vancouver, B.C.
PPG GLASS: *LHR Solarbronze* Glass

THE SOLARBAN FAMILY OF HIGH PERFORMANCE INSULATING GLASSES

PPG SOLARBAN® 575

FOR A UNIQUE, MUTED COPPERTONE FACADE.

The Regency Hyatt House–O'Hare:

visual excitement outside, quiet comfort inside.

The architect of this contemporary hotel near Chicago's O'Hare Field wanted to give guests a comfortable, but exciting and "open" environment. But he first had to solve the problems that go with a cold climate and high winds, and the roar of jets, coming and going. PPG's *Solarban* 575 *Twindow* Insulating Glass Units helped solve the problems. Their double-glazed construction helps keep out the cold, the heat and the sound of airplanes. In addition, these performance characteristics will bring high visibility and visual excitement to the building, with less operating outlay for heating and cooling.

OWNER: Hyatt Corporation, Burlingame, Calif.
ARCHITECT: John Portman & Associates, Atlanta, Ga.
PPG GLASS: *Solarban* 575-20 (2) *Twindow* Insulating Glass Units

Twindow® Insulating Glass.

Burlington Industries Headquarters Building:

a beautiful, comfortable corporate symbol.

This new building nestles in a parklike setting—"a glass cube suspended in a steel cradle." The architect used massive structural steel shapes to create a powerful corporate symbol for Burlington. He selected PPG's *Solarban* 575 (2) *Twindow* Insulating Glass to complement and reflect the steel. And in doing so, he was also able to ensure optimum performance values for the owners. From indoors, the glass reduces brightness of sun, sky and clouds to approximately one-fifth. This improves brightness control and increases visual comfort. In addition, the *Solarban Twindow* Units provide substantial cost reductions in equipment, operating and maintenance of the heating and cooling system.

OWNER: Burlington Industries, Inc., Greensboro, N.C.
ARCHITECT: Odell Associates Inc.
PPG GLASS: *Solarban* 575-20 (2) *Twindow* Insulating Glass Units

PPG INDUSTRIES

THE SOLARBAN FAMILY OF HIGH PERFORMANCE INSULATING GLASSES

PPG SOLARBAN® 480

FOR NEUTRAL GRAY TONES.

CNA Park Place:

the environment is reflected to achieve a marketable rental property.

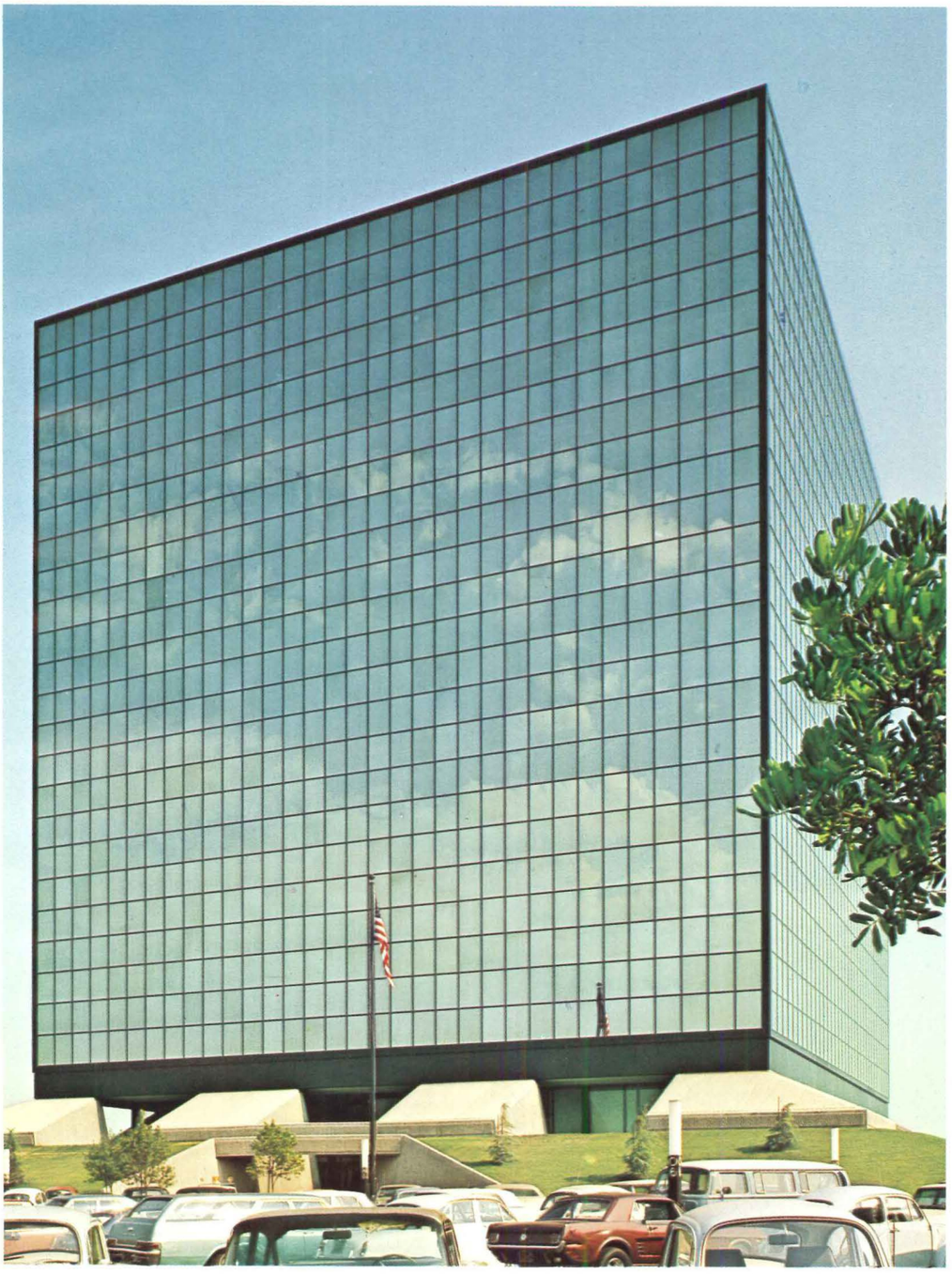
The architect of this combination office and rental property was faced not only with an esthetic challenge but also with a marketing problem put to him by CNA Financial Corporation. The owners felt that to give the Los Angeles building the best competitive advantage, it should reflect its eleven acre park setting, not dominate it. The architect selected PPG's *Solarban* 480 *Twindow* Insulating Glass because its neutral gray reflectivity would provide the "unifying" effect he felt he needed to solve the problem. At the same time, engineering studies showed that the performance characteristics of the glass would offset its higher cost by contributing to savings in heating and air conditioning.

OWNER: CNA Casualty of California, Los Angeles, Calif.

ARCHITECT: Langdon & Wilson, Los Angeles, Calif.

PPG GLASS: *Solarban* 480-20 (2) *Twindow* Insulating Glass Units

Twindow® Insulating Glass.



Sears' Pacific Coast Headquarters Building:

the human element is added to a geometric shape.

The architects determined that a "perfect cube plan" would be appropriate for this combination office/retail complex. With the help of a PPG Computer Analysis, it was indicated that the glare-reducing properties of PPG's *Solarban* 480 *Twindow* Insulating Glass would provide a comfortable working atmosphere as well as reduce original mechanical equipment and operating costs. In addition, the *Solarban* 480 was chosen because its reflectivity is a complement to the design.

OWNER: Sears, Roebuck and Co., Chicago, Ill.
ARCHITECT: Albert C. Martin and Associates, Los Angeles, Calif.
PPG GLASS: *Solarban* 480-20 (2-3) *Twindow* Insulating Glass Units

PPG INDUSTRIES

THE SOLARBAN FAMILY OF HIGH PERFORMANCE INSULATING GLASSES

PPG SOLARBAN® 550 Twindow® Insulating Glass.

OUR NEWEST GLASS. FOR NEUTRAL-TONED REFLECTIVITY.

Under construction

American College of Life Underwriters:

an unrestricted view, and comfort for learning.

The architect chose PPG's *Solarban* 550 *Twindow* Insulating Glass to achieve high reflectivity of a beautiful site; to afford occupants an open view; and to provide a comfortable, glare-free working atmosphere.

OWNER: American College of Life Underwriters, Adult Learning Center, Bryn Mawr, Pa.
ARCHITECT: Mitchell & Giurgola Associates, Philadelphia, Pa.
PPG GLASS: *Solarban* 550-20 (2) *Twindow* Insulating Glass Units

Brandywine River Museum:

a building site is related to art.

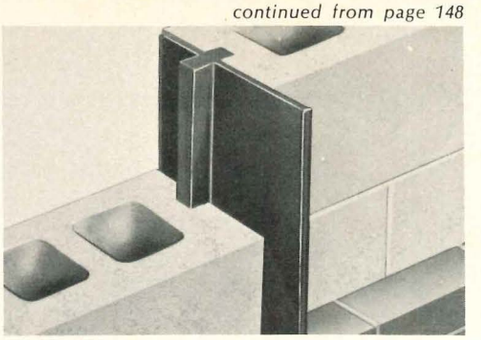
This museum uses PPG's *Solarban* 550 *Twindow* Insulating Glass in a mirrorlike three-story window wall to "saturate the eye with the ethos of sky and river." The *Solarban* 550 *Twindow* Units—neutral gray toned in appearance, neutral by transmission—also provide important environmental-control benefits, including an exceptional ability to reduce heat transfer by conduction.

OWNER: The Tri-County Conservancy of the Brandywine, Inc., Chadds Ford, Pa.
ARCHITECT: James R. Grieves, Village of Cross Keys, Md.
PPG GLASS: *Solarban* 550-20 (2) *Twindow* Insulating Glass Units

PPG: a Concern for the Future

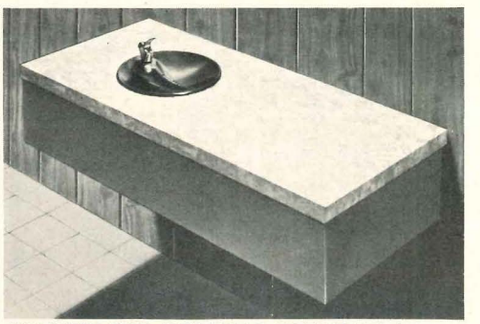
PPG INDUSTRIES

continued from page 148



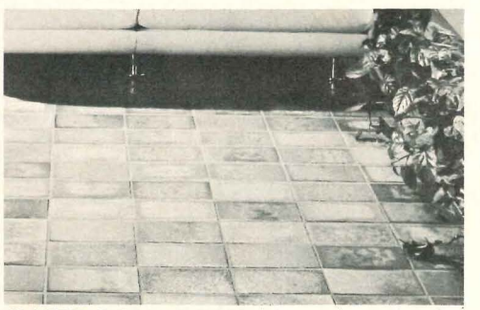
VINYL CONTROL JOINTS / Fillers are designed to fit standard sash blocks and provide a vertical joint for the relief of stress in concrete masonry walls. A range of sizes will accommodate 90 per cent of all masonry construction. ■ AA Wire Products Co., Chicago.

Circle 305 on inquiry card



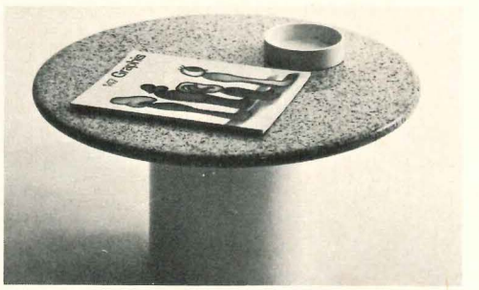
COUNTER-TOP DRINKING FOUNTAIN / A variety of finishes including bronze, stainless steel and aluminum are available. ■ Haws Drinking Faucet Co., Berkeley, Calif.

Circle 306 on inquiry card



GLAZED CERAMIC TILES / Non-identical color tone variations provide a total harmonized effect. A range of colors is available. ■ Amsterdam Corp., New York City.

Circle 307 on inquiry card



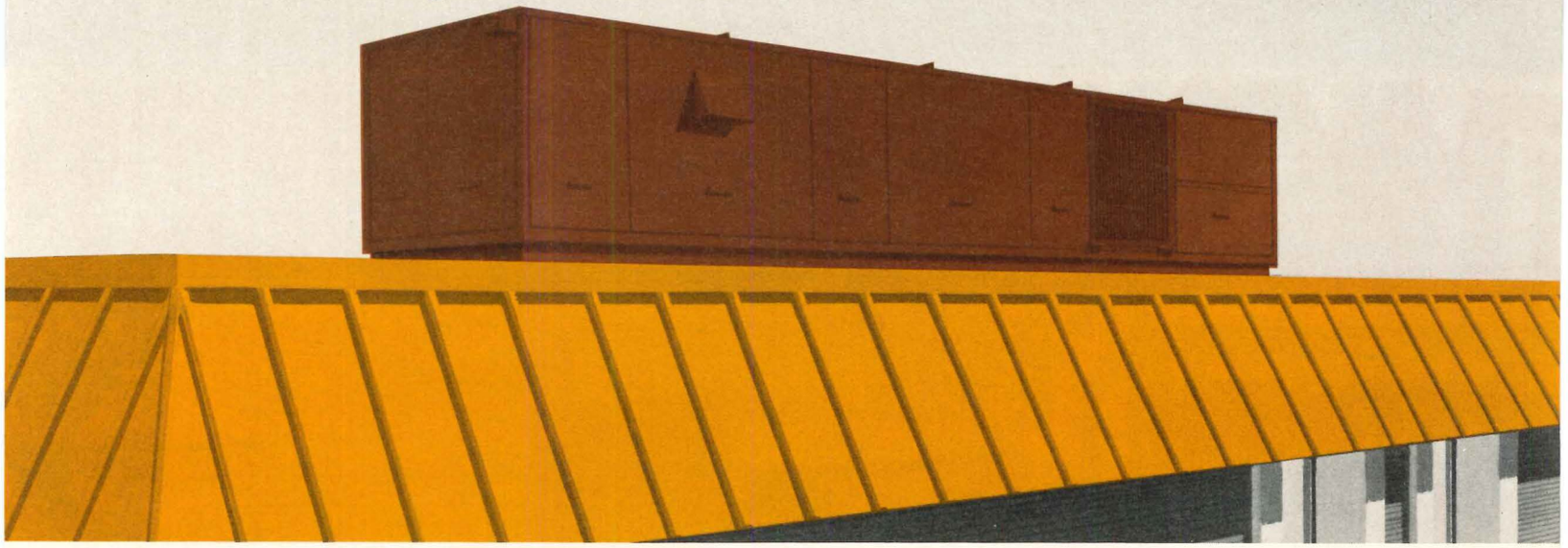
END TABLE / Top is available in white marble or speckled granite on a white enameled column. ■ Stendig Inc., New York City.

Circle 308 on inquiry card

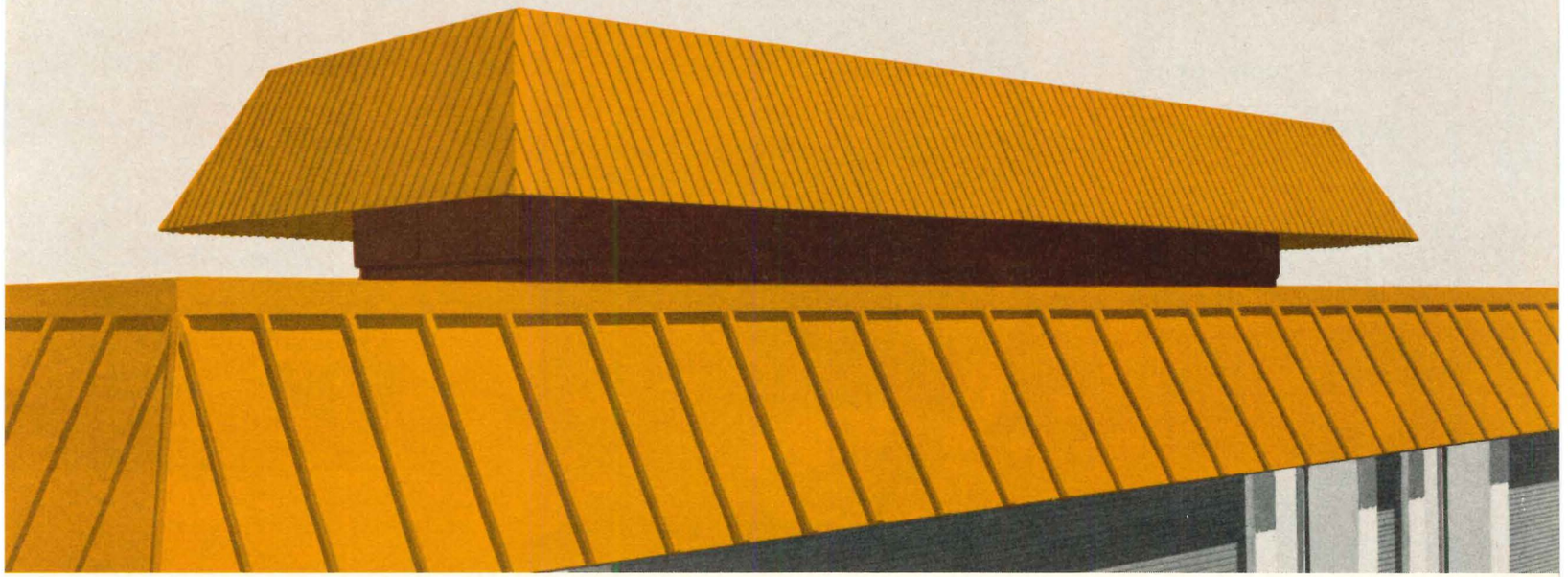
more products on page 170

For more data, circle 78 on inquiry card

Now you can have better air



with a better look by AAF



AAF has a new roof mounted multizone with significant advantages like reheat capability, solid state controls, high efficiency gas furnace and more filter options than any other multizone offered today. That's the inside story. The outside story is our new AAF exclusive facade system to blend the unit into your design environment.

You no longer have to rely on expensive penthouses or roof-penetrating fences to hide the spartan mechanical appearance of rooftop air conditioning, heating and ventilating systems. With our new architectural facade system, multizone camouflage is simple and economical. Roof integrity is never threatened because facade supports are extensions of the rugged AAF multizone frame. There is no roof penetration with its accompanying problems.

If our standard corrugated aluminum facade, which is available in ten colors, doesn't meet your needs, you can do it yourself. Use our unique facade frame with a facia material of your own choice and design.

Choose from a mansard type slope design, or a straight-line look. And, servicing the units is no problem either. There's plenty of room for routine service without removing the facia.

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AIR HANDLING PRODUCTS AND SYSTEMS

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Knoll International

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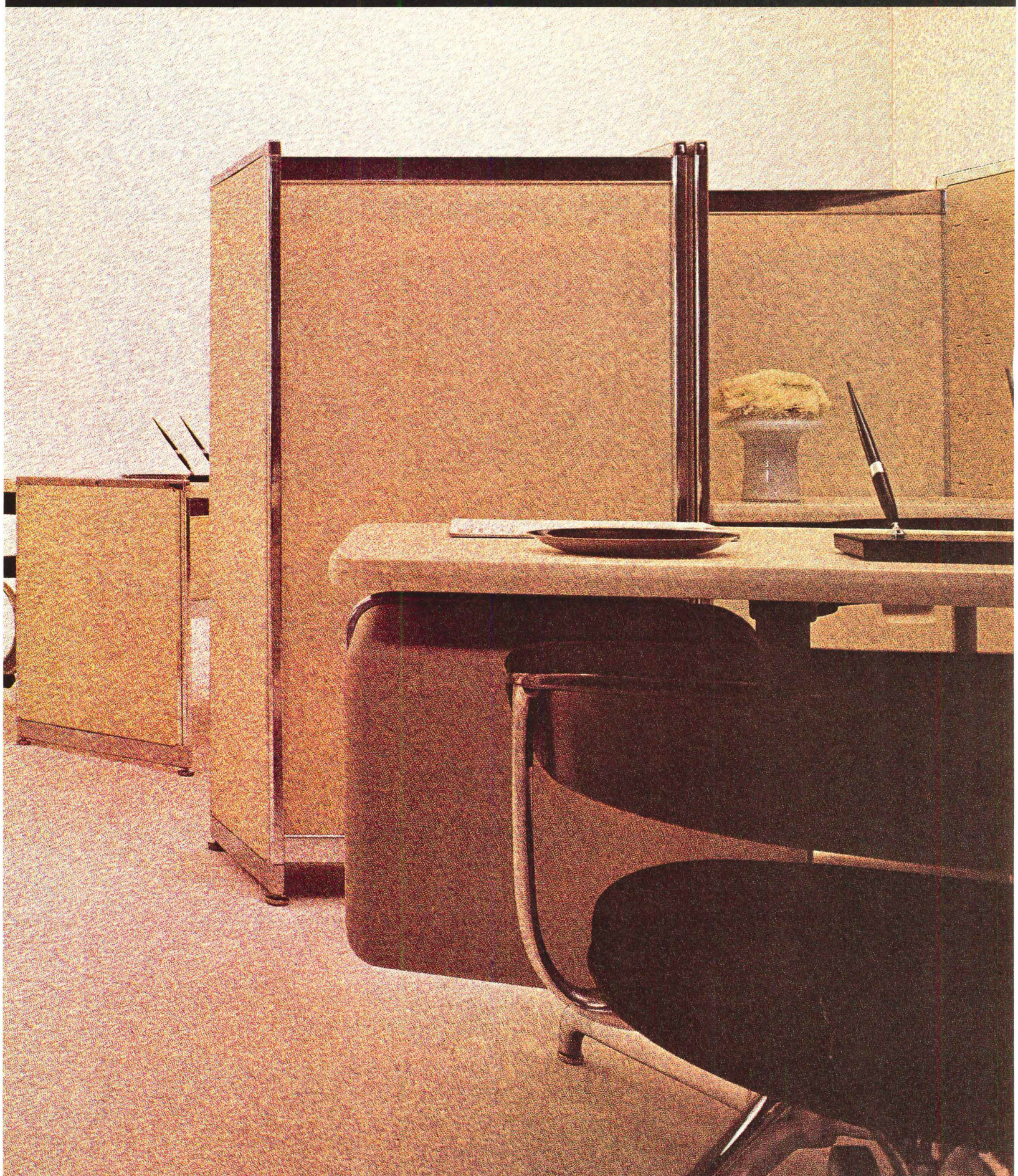
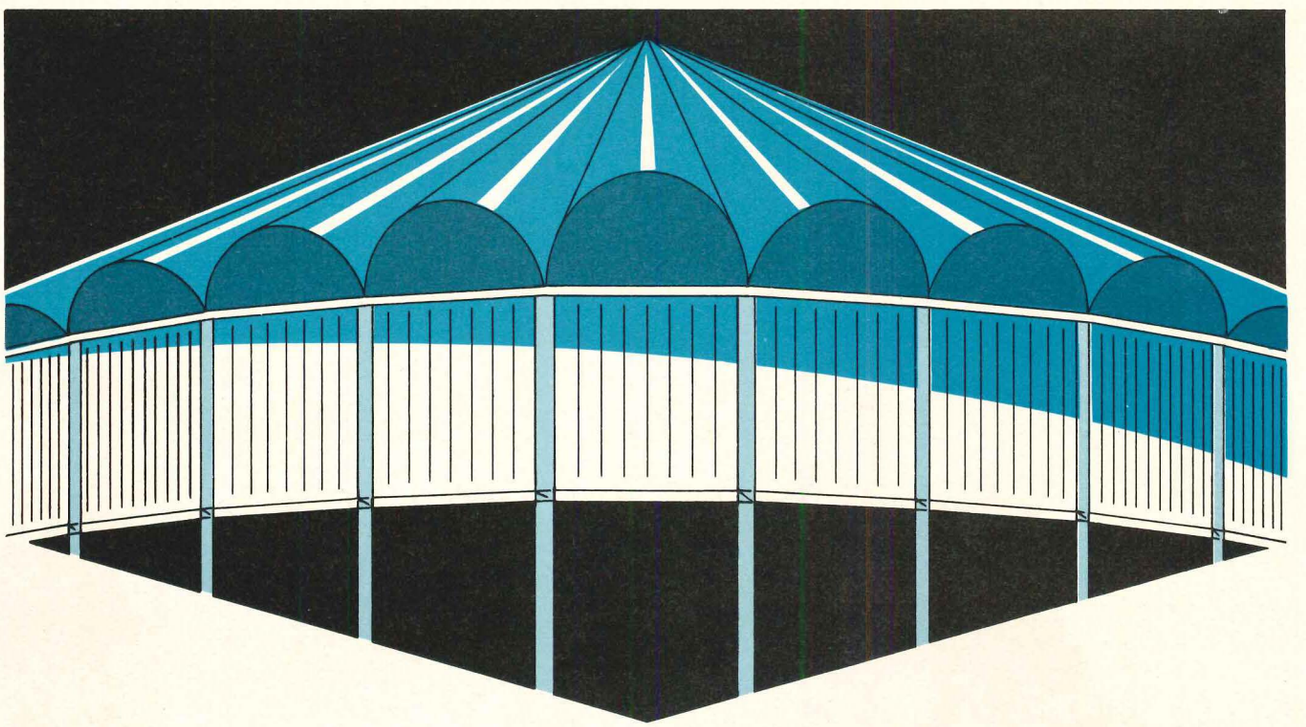
Andreas Christen designs for Knoll

His Landscape System makes an impressive contribution
to the art of open office planning. It is one of two landscape systems previewed by Knoll
at the June meetings of the A.I.A. and NEOCON.

Knoll International operates in 31 countries.



UPJOHN'S URETHANE INSULATION GIVES YOU UNLIMITED SCOPE IN DESIGN



SPRAY Upjohn's Urethane foam can be sprayed directly on the job. Inaccessible areas become easy to insulate . . . regardless of configuration.

POUR OR FROTH Upjohn's Urethane foam can be poured or frothed into any shaped cavity. Foaming and fabrication become one, efficient, economical operation.

SLAB Ready-formed panels of Urethane are easy to apply. They are available in many sizes and can be shaped with ordinary hand tools.

All available in KODE 25™ UL listed materials.

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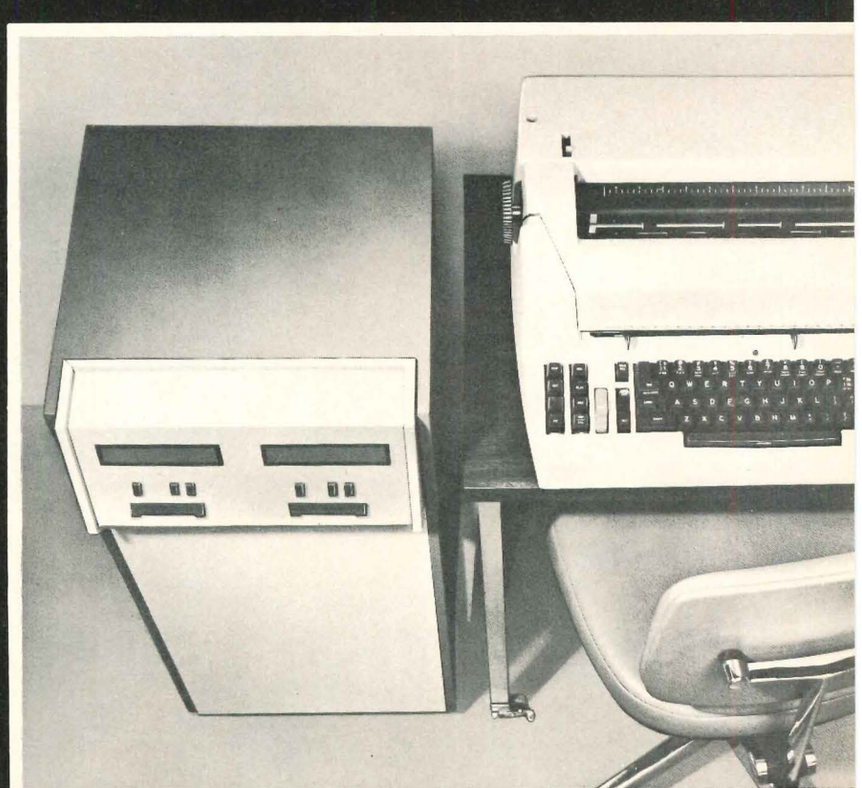

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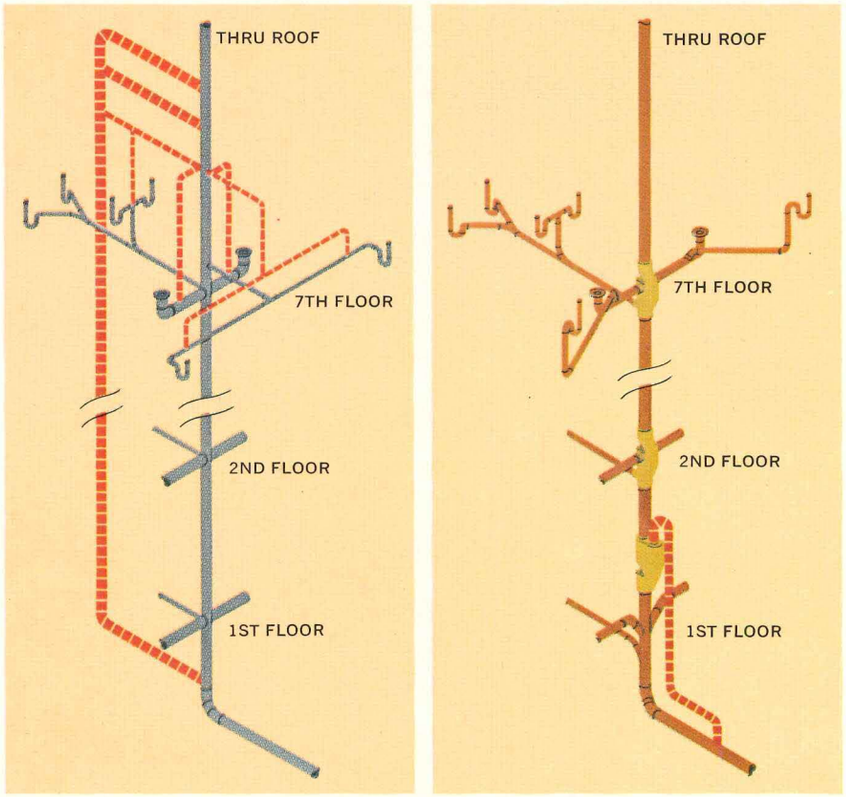
Copper Sovent single-stack plumbing system. The new way to cut multi-story drainage costs.



The simplicity and economy of the Copper Sovent system (right) are dramatically shown in this graphic comparison with the traditional two-pipe system. One contractor, on a recent 200-unit job, returned a credit of $13,000 to the Housing Authority, based on savings with Sovent.

Even though the Copper Sovent single-stack plumbing system is a major construction breakthrough, it's really very simple.

The soil and vent stacks are combined into one Sovent self-ventilating stack.

What you don't need any more is a separate vent pipe.

So you can put fixtures, like island sinks, where you want them. Not where the old two-pipe drainage system forced you to put them.

Plus you get more square feet of income-producing space because the Copper Sovent system takes up less space in the walls.

And because the Copper Sovent system weighs less, you get more room in your structural load estimates.

There's more room in your budget too because the Copper Sovent system is easier and cheaper to install.

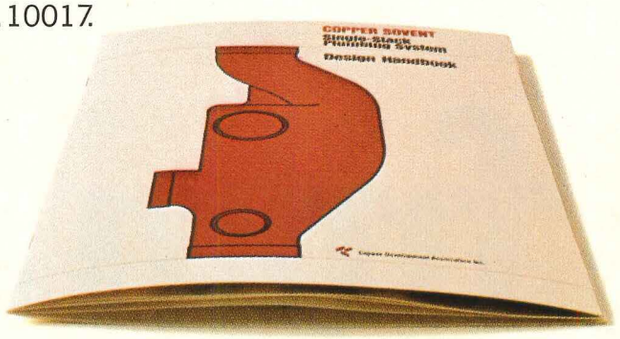
Since it was first installed in the Habitat Apartments at Montreal's Expo '67, the Copper Sovent system has been used in 18 high-rise buildings across the United States.

But that's just the beginning. Forty additional major installations are being planned right now, for a grand total of more than 8,000 apartments.

Couldn't you use more room or flexibility in your new building design?

For a detailed design handbook on the Copper Sovent single-stack plumbing system, write us: Copper Development Association Inc., 405 Lexington Ave., New York, N.Y. 10017.

COUNT ON COPPER



For more data, circle 83 on inquiry card

Bright idea

Washfountains in the corridor are spoilsports. They take all the fun out of washing up. Like squirting other kids. Plugging the plumbing. The other things kids do when they're not watched. With vandal-proof Bradley Washfountains in the corridor, students get in and out of toilet rooms quickly, wash where they can be supervised. Semi-circular Bradglas® Washfountains made of reinforced polyester are ideal for the job. The 54" size projects only 35¼" from the wall . . . serves four students at once from one set of plumbing connections. Smart newstyling . . . 11 bright colors. Durable, non-porous, fire-safe. Won't chip, crack or peel . . . swell, shrink or warp. Comparable to steel on a strength-to-weight basis. See your architect or consulting engineer. And write for latest literature. Bradley Washfountain Co., **9109** Fountain Blvd., Menomonee Falls, Wis. 53051.

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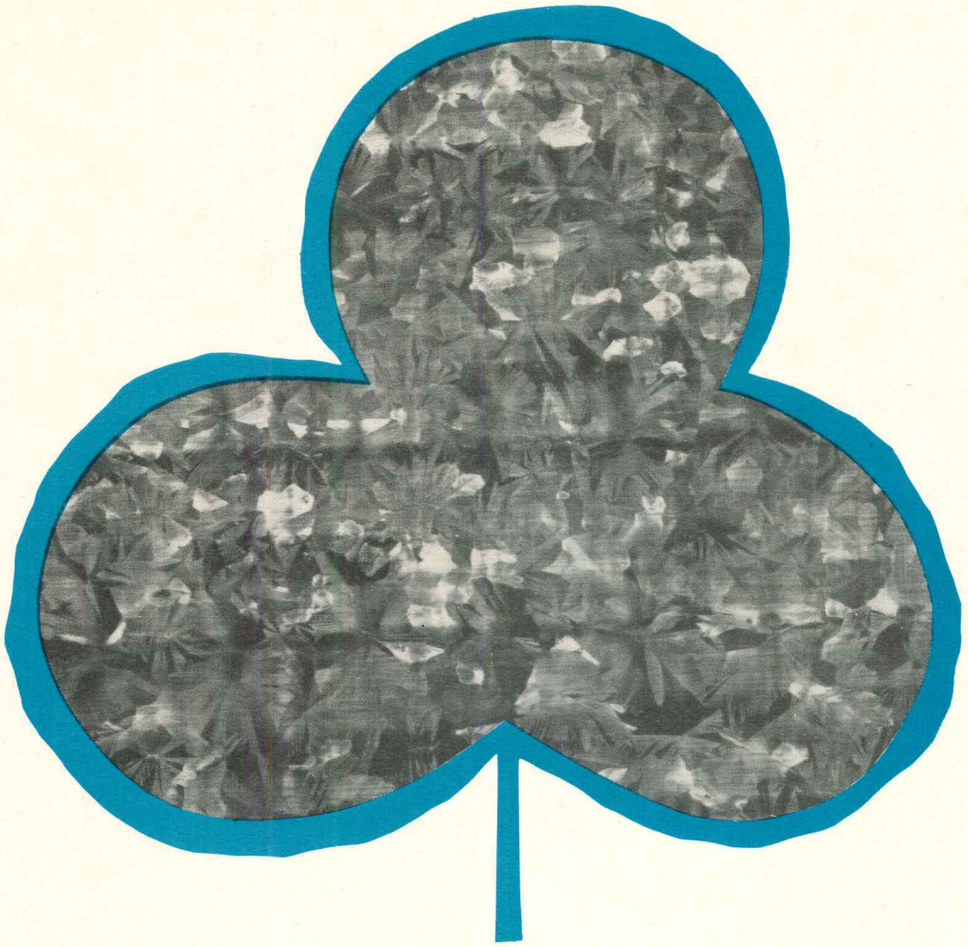

How FLOWERS OF ZINC guard steel against rust for 20 years and more

The myriad of shining zinc "petals," which galvanizing deposits on steel, form both a shield and an "electric fence" against rust. ☐ The layer of zinc protects first as a mechanical barrier which completely covers the steel to seal out corrosion's attack. Zinc's secondary defense is called upon when the protective coating is scratched, gouged or worn through to the steel itself. Then, an electrochemical current of galvanic action fences these gaps and the zinc slowly sacrifices itself as it continues to protect the steel. This action takes place because, in the galvanic series, zinc is less noble than steel and will corrode sacrificially . . . fighting a stubborn delaying action against corrosion's attack. ☐ No other material provides the combination of strength, corrosion-resistance and economy found in galvanized steel. That's why it's so widely used in reinforcing rods, floor decking, siding and other architectural applications.

IBM's beautiful Data Processing headquarters utilizes galvanized re-rod to prevent sub-surface rust and consequent staining.

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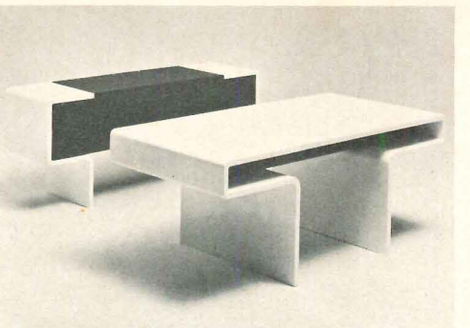
continued from page 158



OFFICE FURNITURE / Desk (right) is formed of white fiberglass accented by rosewood. Credenza is available in black vinyl or white fiberglass for top center section. ■ Vecta Contract Co., Div. of The Vecta Group, Inc., Dallas.

Circle 309 on inquiry card

PLANTERS / Molded fiberglass designs for use in public buildings, malls, parks and recreation areas are available. ■ Brighton By-Products Co., Inc., New Brighton, Pa.

Circle 310 on inquiry card

FLOOR SURFACING / Latex/cement material is said to withstand loads as great as 18,000 psi. Typical applications include indoor and outdoor loading docks and ramps, and storage areas. ■ Permaflex Products Co., Philadelphia.

Circle 311 on inquiry card

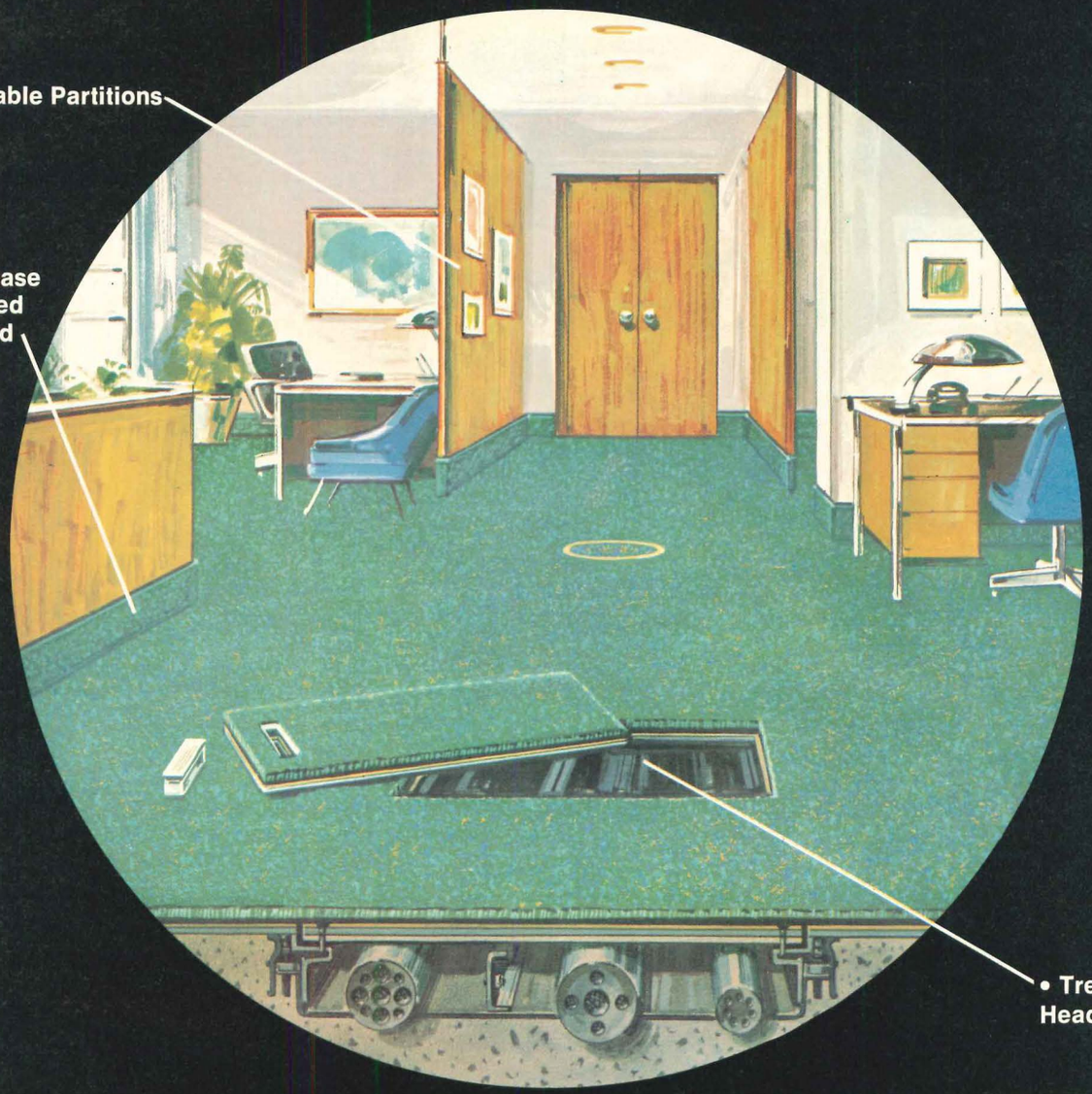
CHAIR/TABLE / Chrome supports seat and back of chair and base of cocktail table. ■ The Slater Co., Chicago.

Circle 312 on inquiry card

more products on page 190

All systems are go

Carpet Systems from CCC with Acrylic 73... engineered to integrate with all architectural systems.



Carpeting is no longer a simple matter of beautiful floors. The challenge today is to integrate carpet with the total architectural environment.

CCC has this very complex problem down to a precise system—the unique Acrylic 73 Carpet System. We analyze every element involved—right from the blueprints. Recommendations are based on design, function and maintenance factors.

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Acrylic 73 is a total performance carpet. CCC's exclusive blend of 70% long-staple Creslan® acrylic and 30% long-staple commercial nylon combines unequalled stamina with design versatility and appearance retention.

CCC is the world's largest manufacturer of commercial and institutional carpet systems. We would like to tell you more about what we can do for you. Why not send in the coupon today.

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Company_____

Address_____

City_____ State_____ Zip_____

For more data, circle 88 on inquiry card

ARCHITECT: Tasso Katselas, Pittsburgh, Penn.

STRUCTURAL ENGINEER: R. M. Gensert Associates, Cleveland, Ohio
CONTRACTOR: Pevarnik Bros., Inc., Latrobe, Penn.

A pleasing study in line and form is the new $2,700,000 Science Complex at St. Vincent College in Latrobe, Pennsylvania, which has been cited as a "creative approach to college building design." The unique qualities of ChemComp® Cement help to make the structure as sound as it is beautiful, lending structural superiority to Tasso Katselas innovative designs.

- REDUCES size and incidence of drying shrinkage CRACKS
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Cleveland, Ohio 44101

PENN-DIXIE
Cement Corp.
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New York, New York 10019

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Portland Cement Company
1034 Wilshire Boulevard
Los Angeles, California 90017

TXI
Texas Industries, Inc.
P. O. Box 400
Arlington, Texas 76010

For further information contact: **Chemically Prestressed Concrete Corp. 14656 Oxnard Street, Van Nuys, California 91401** or the sales office nearest you

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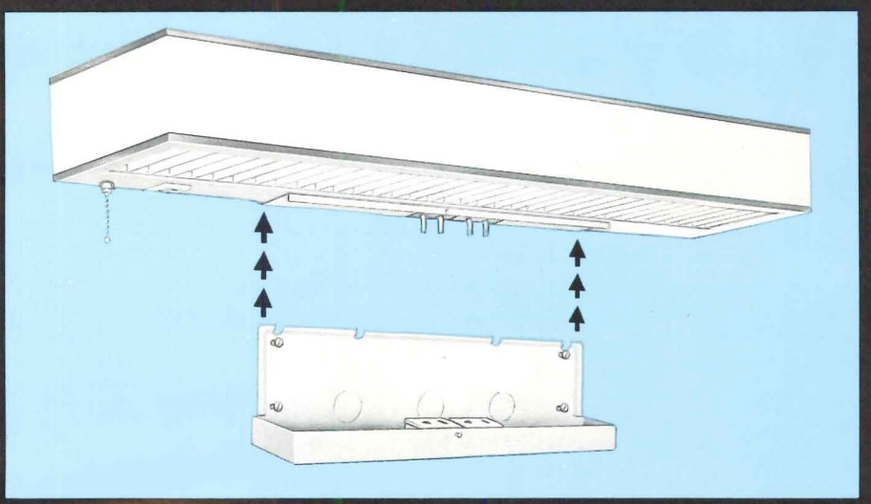
AVAILABLE ONLY WITH MILLER PATIENT ROOM LIGHTS . . . .



. . . DISCONNECT MOUNT

Bed light plugs into wall mounting consolette with simple, lift-on action. It is easily lifted off for simultaneous electrical and mechanical *disconnect.*

When light requires relamping, cleaning, or repair, there's no need to disrupt routine in patient room or deprive patient of his light. Because of this unique portability feature, *maintenance* people can remove fixture from room and replace it with a spare unit in mere seconds. Lower maintenance costs are assured because work is accomplished on a more efficient basis, away from patient areas.

Compared with conventional, wall mounted bed lights initial *installation* is greatly simplified. *One man* can quickly make wiring connections and secure compact, lightweight consolette to wall. He doesn't have to take fixture apart or handle loose parts. Additionally, bed lights can be stored, and plugged into their consolettes *after* painting, decorating and furnishing are complete and rooms are ready for occupancy. Installation advantages and economies are applicable for both renovation and new construction.

miller bed lights with this feature are simpler, easier, more convenient, and less costly to maintain and install

Send for brochure, MILLER HEALTH CARE LIGHTING

THE miller COMPANY • MERIDEN, CONNECTICUT • UTICA, OHIO • MARTIN, TENNESSEE

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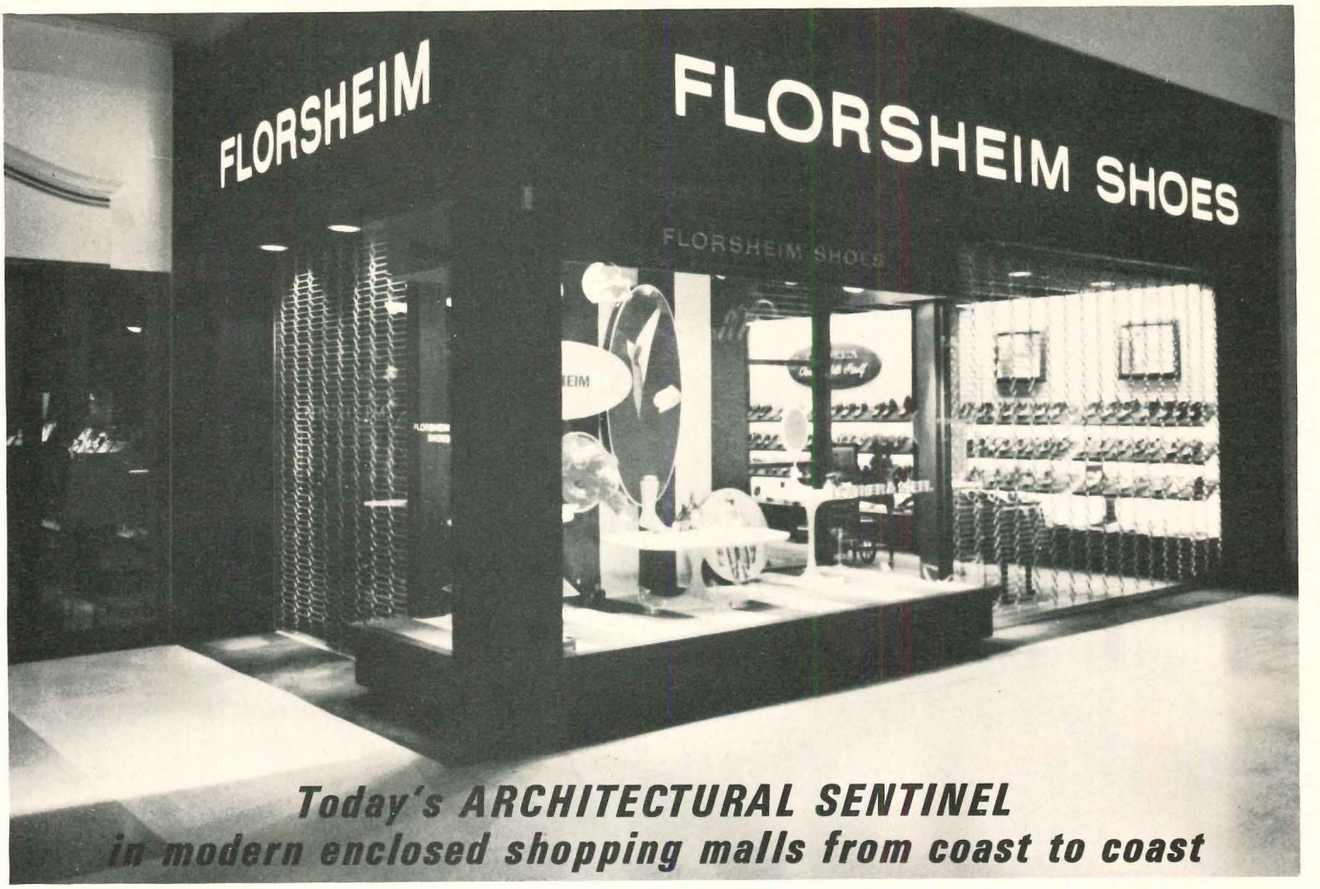

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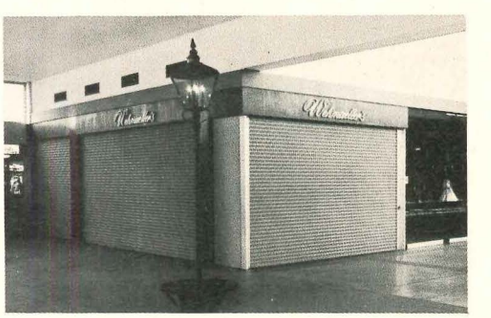
ROLLING GRILLES

The most modern attractive way to provide the extra security needed today for display windows and store fronts. Regardless of which of the choice of designs selected, Kinnear's standard 9″ maximum spacing of vertical links insure a better looking, stronger grille . . . and the 1 5/16″ maximum bar spacing will repel objects even as small as a golf ball. This construction insures an extra rugged dependable barricade without sacrificing public vision of merchandise displays — or light, or circulation of air. That's why Kinnear Rolling Grilles are proving so popular with national organizations everywhere. Spring counterbalanced and coiling upward, Kinnear Grilles are easy to open or close and completely out-of-the-way when open. They're built in any size and suited to either electric or manual operation. Another adaption of time-proven Rolling Doors, pioneered and backed by Kinnear — an international organization recognized over 70 years for leadership and service. Write for catalog.



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Saving Ways in Doorways Since 1895

KINNEAR CORPORATION
and Subsidiaries
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Factories:
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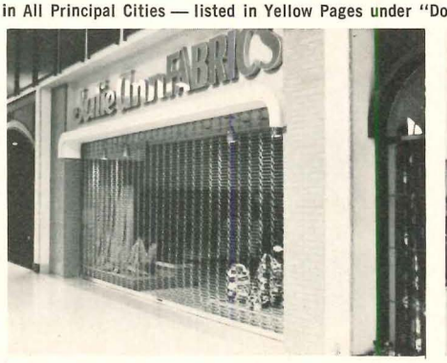
—for maximum protection for outside display windows specify Kinnear Rolling Doors—the solid steel barricade.

Offices & Representatives in All Principal Cities — listed in Yellow Pages under "Doors." Also see Sweet's!



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New Alpha 3000 is a security system. A fire alarm system. A patrol tour system. An equipment monitoring system. A communications system. A card reader system. A CCTV system. Even a building automation system. It's all of these . . . or any part.

Alpha 3000 makes specifying a protection system a whole lot easier. Lets you forget about multiple wiring layouts, system gaps and overlaps.

Honeywell will work with you. Help analyze your client's unique needs . . . protection, building automation. Or both. Then, develop a *cost-effective* solution.

We integrate whatever protection and environmental devices are needed into a *single* master system. A system that can grow with your client . . . change as he changes. Using a common transmission cable. With leased-line reach. And a single reporting format and command keyboard.

You have just *one* company to work with . . . *one-source* responsibility from system analysis to final check-out and service. Honeywell, G2118, Minneapolis, Minn. 55408

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Gorilla under glass.

In safety glass, variety is the name of the game at ASG. Variety in tempered, wired or laminated. Patterned, clear or tinted, for indoors or out.

No matter how wild your safety problem, ASG comes through. Like we did for Como Park Zoo in St. Paul, where Don and Donna, the gorillas, stay safe and happy in a cage of laminated tempered plate sides and polished Nuweld® top. It's an everyday business with us across the country.

This wide world of safety comes to you from a single source, shipped in one lot from one factory. You get exactly what you want, when you want it, in one economical shipment. You save time. You save bothersome handling. You save money!

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For special "Safety Glass and Safety Codes" brochure, write: ASG Industries, Inc., P.O. Box 929, Kingsport, Tennessee 37662.

ASG Industries Inc.
P.O. Box 929, Kingsport, Tennessee 37662

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And now the kinetic carpet.

A thick, nubby, half inch of homespun. Then, as you move, another level of interest appears. A deeper level. A different texture. An undercurrent of accent color. It's an honest-to-goodness design innovation, with a fine one-ply loop below a springy 2 and 3 ply surface. A horizontal atmosphere all by itself. . . it bears the wool mark label . . . mark of the world's best . . . pure wool pile. Available in all beige, grey, brown and off-white, or with blue, black, brown or yellow undertones. We'll also dye the undertone to match your own accent color. We call it Connemara. Send for specs and swatch.

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Framingham, Massachusetts 01701

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The New KSH-19 Lighting Panel is NOT Revolutionary

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Most important—it proves again that anyone who still thinks injection molding is the only way to produce top quality lighting panels . . . is way behind! Yes. KSH has proved it again!

KSH-19 is extruded. And it will equal or excel the performance of any injection molded panel of similar design. WE GUARANTEE IT. YOU CAN SPECIFY IT WITH CONFIDENCE. Now, check the features:

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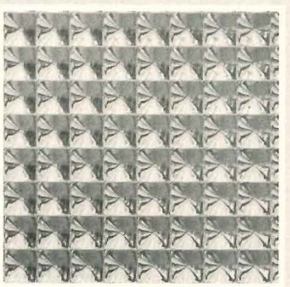

A basic design. Every prism clean and sharp for top performance.

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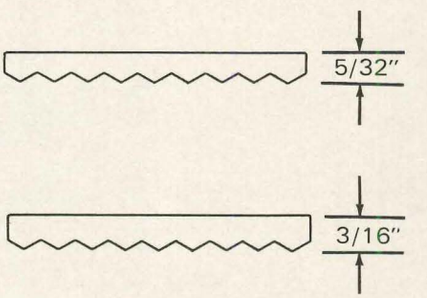
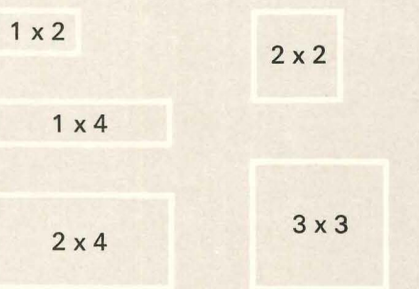


MANY SIZES



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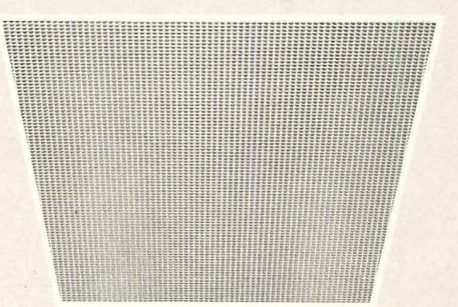

Excellent lamp hiding power. No harsh streaks.

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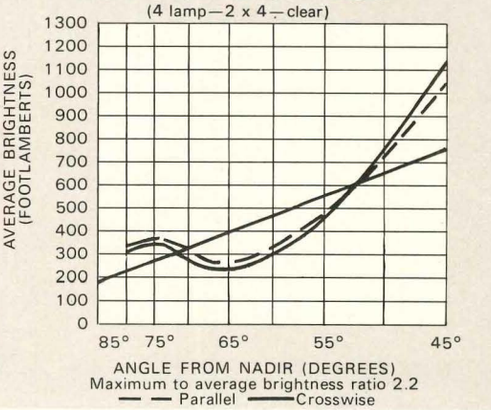

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KSH, INC.
10091 MANCHESTER
ST. LOUIS, MO. 63122

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Fresh outlook on architectural extrusions:

Complement your windows and extrusions with added value, beauty and sales appeal by specifying DURACRON® Color Coatings.

FOX CHASE CONDOMINIUM, Mt. Clemens, Michigan. Architect, Progressive Associates, Inc.; Builder, Bert L. Smokler Co. (subsidiary of Dreyfus Corp.); Window Fabricator, Ida Products Co.; Coating Applicator, Pittsburgh Aluminum Alloys; National Aluminum—A Unit of National Steel Corp.

Clean, carefree DURACRON Color Coatings from PPG are ideal for applications on all aluminum windows and extrusions. Far more appealing than raw aluminum which is subject to unsightly pitting and dulling, these color-fast, baked-on acrylic finishes come in white and a range of bright, beautiful colors that keep their original lustre year after year. It's a fresh sales-booster. And DURACRON Color Coatings are formulated to meet a variety of requirements for permanence, low-maintenance and economy.
Gain this new outlook on aluminum windows and extrusions. Send for further information on DURACRON Color Coatings. See Sweet's Architectural File, Industrial Construction File, or write Product Manager, Extrusion Coatings, Dept. 16W, PPG INDUSTRIES, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

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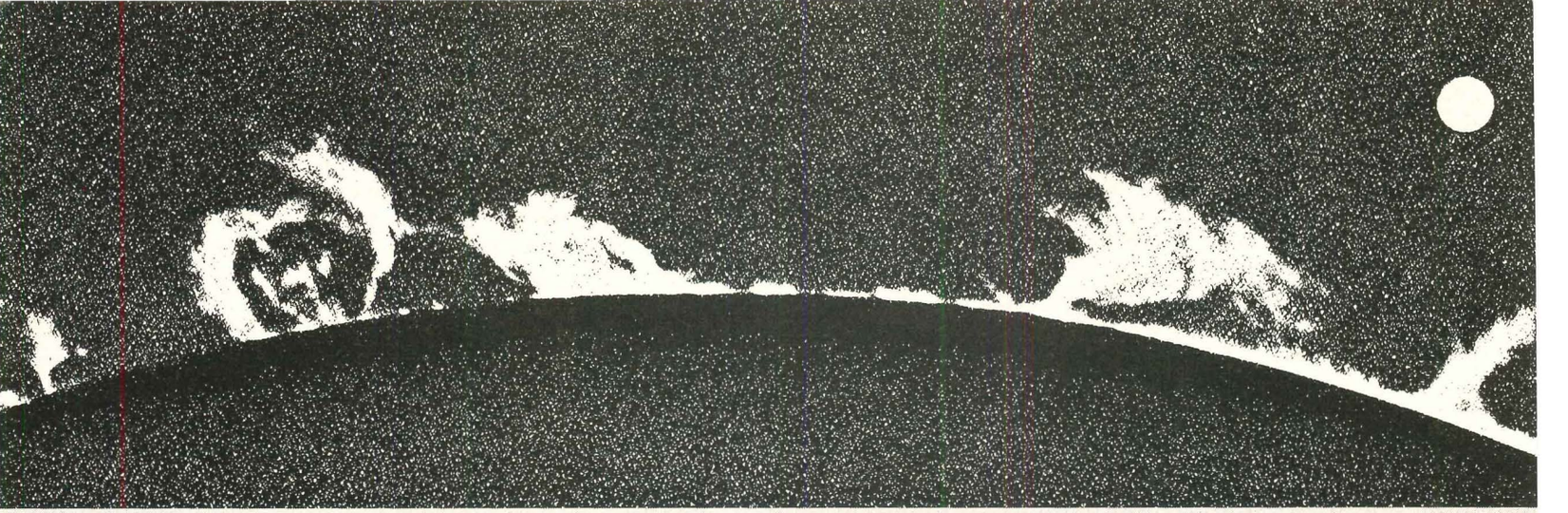
Extrusion Coatings PPG INDUSTRIES



Outside heat raises inside cooling costs. Zonolite can help reduce the problem at its foundation.

Look into Grace-Zonolite® Masonry Fill Insulation. It's incredible stuff. To put it another way, it's a lightweight, free-flowing, water-repellent, vermin-proof, rot-proof, fire-proof, sound-deadening, inorganic, granular vermiculite!

Year after year, it can deliver savings in cooling and heating dollars that far exceed the initial cost of the fill.

Other virtues? Yep.

Zonolite® Masonry Fill Insulation reduces sound transmission 20% to 31%. It increases a 2-hour fire rating to 4. It pours in at the rate of 28 square feet per minute. It's acceptable in FHA-financed housing.

Want all the details, test data, specifications, and such?

Say the word!

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Wall Thickness, Inches	Type of Block	Block Only	
		Uninsulated	Insulated
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8	Lightweight	.33	.17
	Heavyweight	.53	.36
12	Lightweight	.33	.12
	Heavyweight	.46	.25

ZONOLITE

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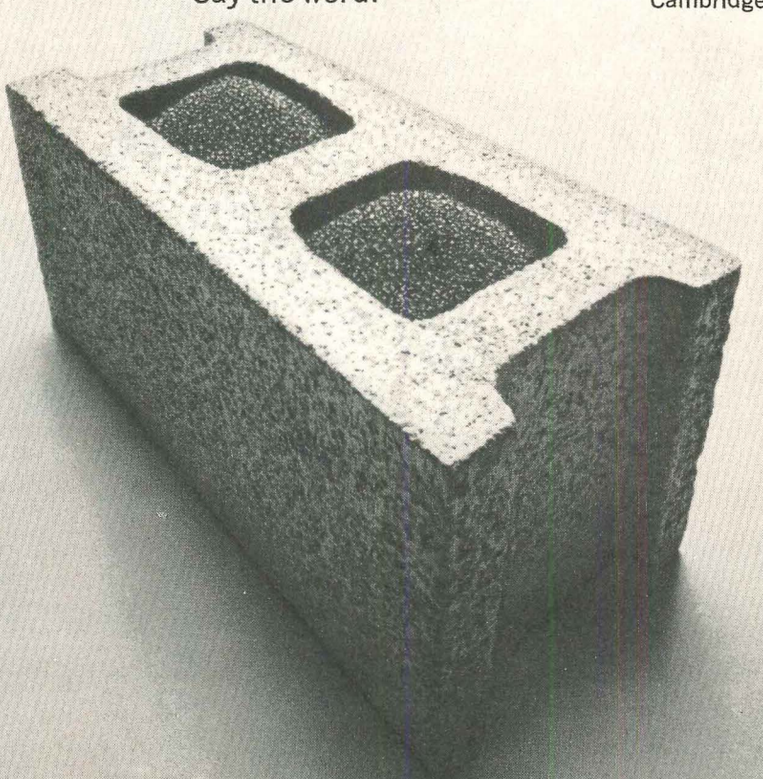
GRACE



Just say Grace.

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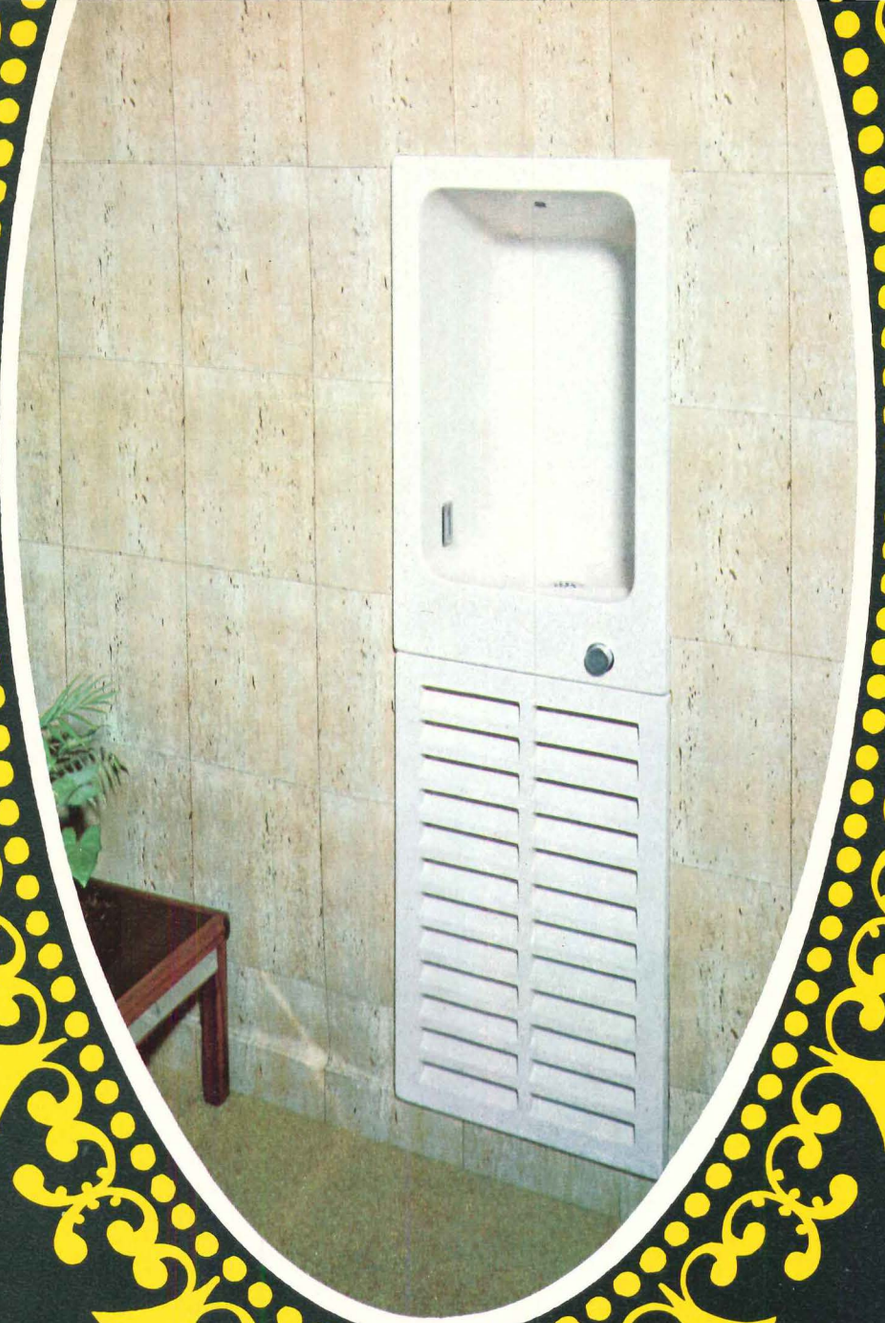

Fountain, fountain in the wall...

Is this the fairest of them all? If it isn't it must be pretty close to it. Smooth-polished magnesite stone surfaces are highly complementary for your decor planning . . . choice of five beautiful colors, too. This space-saving, full-recessed drinking fountain has matching louvered grille with remote electric water chiller. Get all the facts; write today! HAWS DRINKING FAUCET CO., 1441 Fourth Street, Berkeley, Calif. 94710.

Model 2300-RC6 or 12 illustrated in Antique White finish.

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Different floors in your buildings lead different lives. Some get walked on, spilled on, wheeled on and even dropped on.

Others just have to look beautiful. And still others have to do both. So it seems natural to use special flooring made for special needs.

That's where your GAF Representative comes in. He can help you tailor just the right flooring for your buildings.

For example you might use a Royal Stoneglow tile for an especially heavy traffic area. It features very long wear and no-wax maintenance.

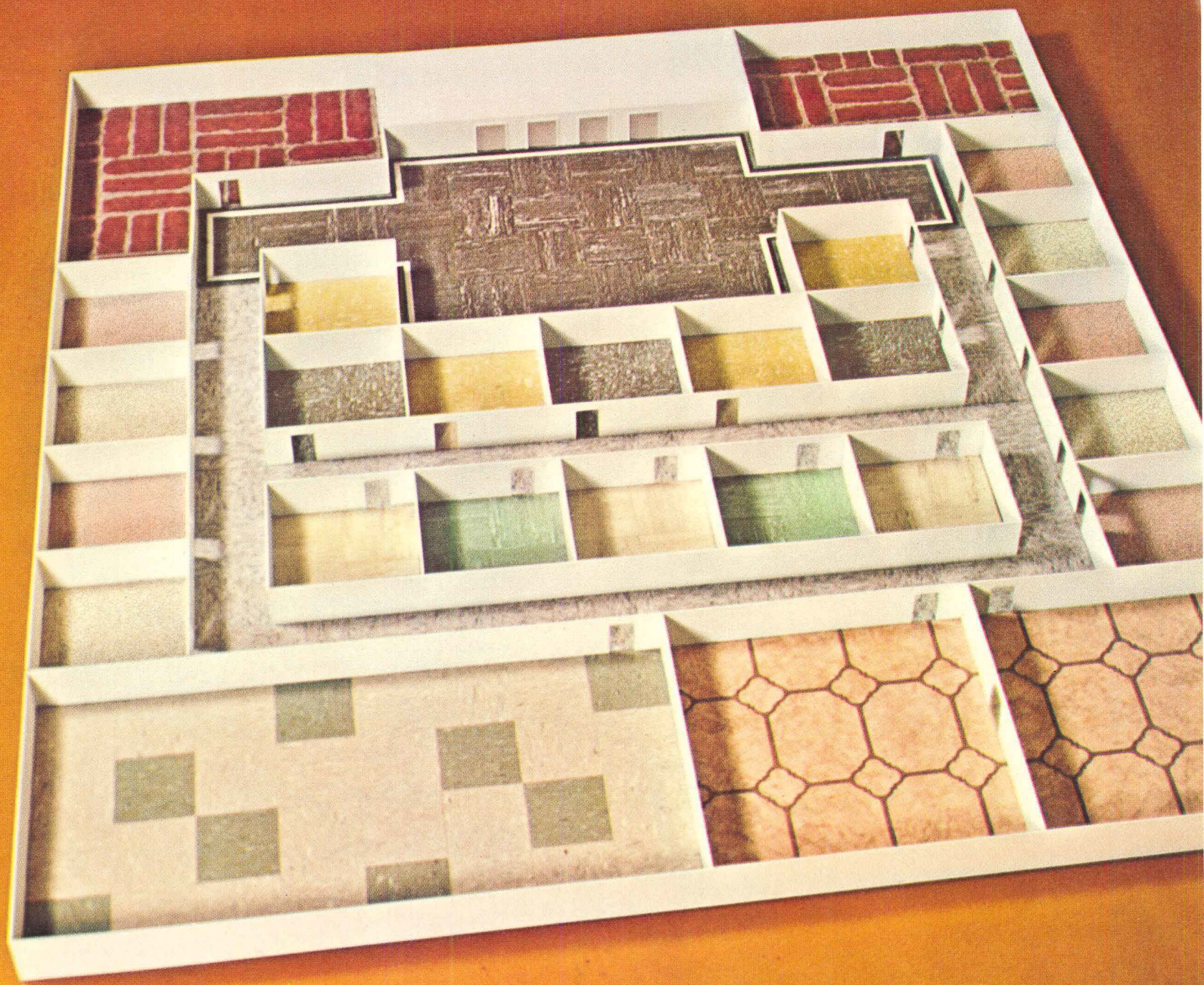
Then for a medium traffic area you might choose highly decorative sheet vinyl which now has interim Federal Specification Number L-F-001641 (GSA FSS). It wears well too, but features warmth and comfort underfoot. And like the tile it's fire-safe.

Your GAF Representative features such a broad line, that no matter what your needs are, he's sure to have the right style and color for you.

For more information contact: GAF Architectural Dept. AR-11 140 W. 51 Street N.Y., N.Y. 10020.

gaf Bright Future VINYL FLOORS

GAF introduces floors for the way your buildings really work.



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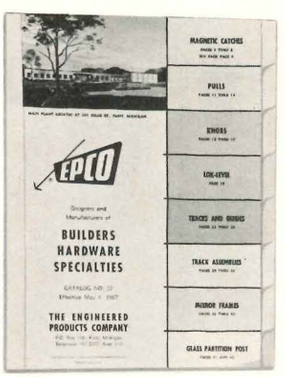

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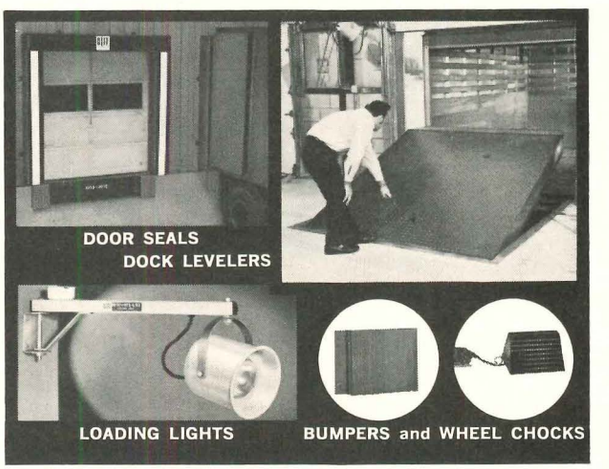

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Structurally safe and strong, fire-retardant Hetron and Hetrofoam-based modular building units and sectional components belong in the nicest places. From recreation homes to multi-story buildings. Simulated brick and stone-like panels. Shatterproof windows. See-through roofs. Fire-resistant bath and shower units. Featherweight and fire-retardant, Hetron and Hetrofoam help to make strong sandwich panels for walls, floors, and ceilings.

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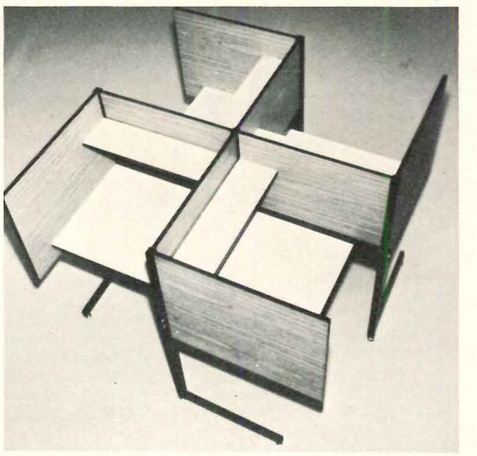

STUDY CARRELS / Modular units cluster into a variety of geometric shapes. Common panels between adjacent positions eliminate panel doubling. ■ Howe Folding Furniture, Inc., New York City.

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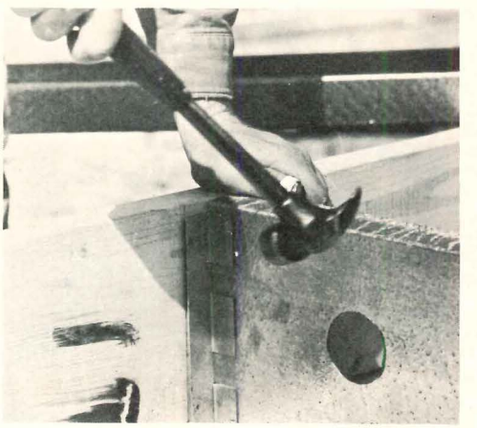

STEEL FLOOR JOISTS / End clips nailed to standard band board hold joists in position. Stairway and fireplace openings are formed by heading the joists. Hanger brackets support headers and tail joists. Decking is added and secured by self-tapping screws. ■ Armco Steel Corp., Middletown, Ohio.

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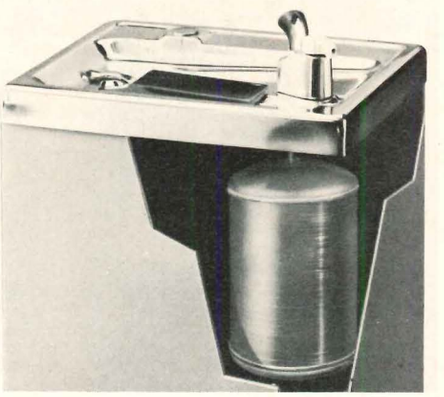

WATER COOLER / An interior storage tank holds up to nine quarts water reserve, depending upon the size of the unit. Other features include a pre-cooler system and a five-year warranty. ■ Ebco Mfg. Co., Columbus, Ohio.

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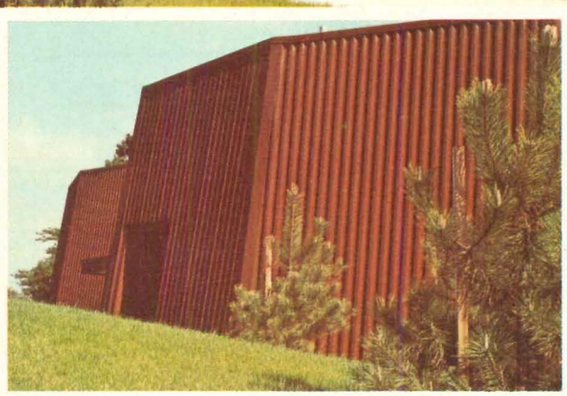

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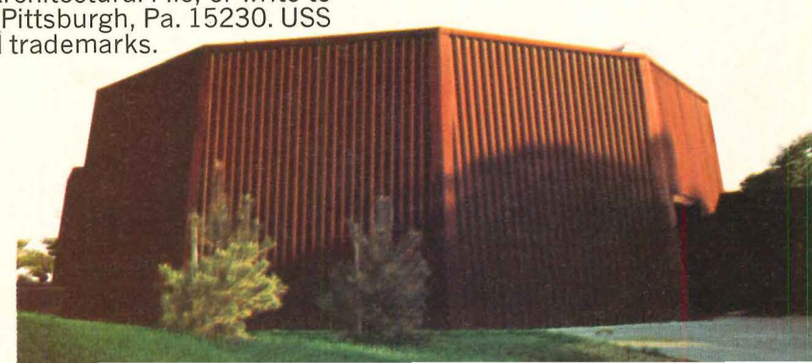

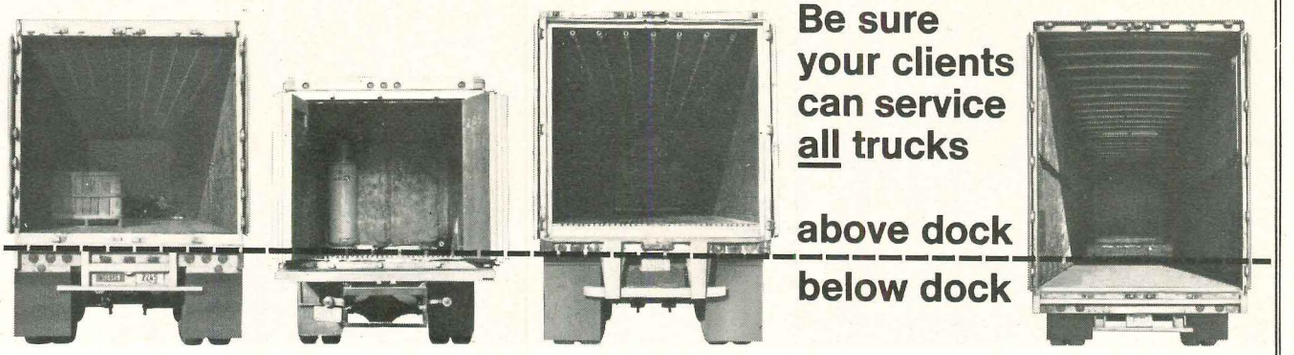

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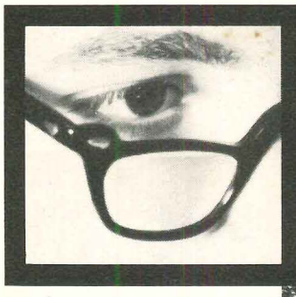

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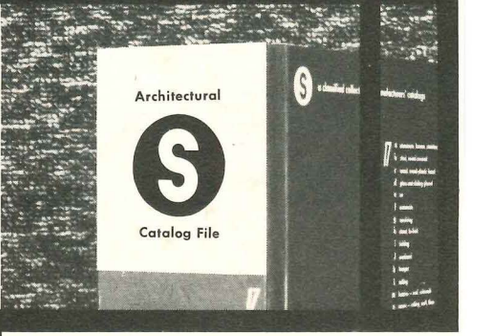

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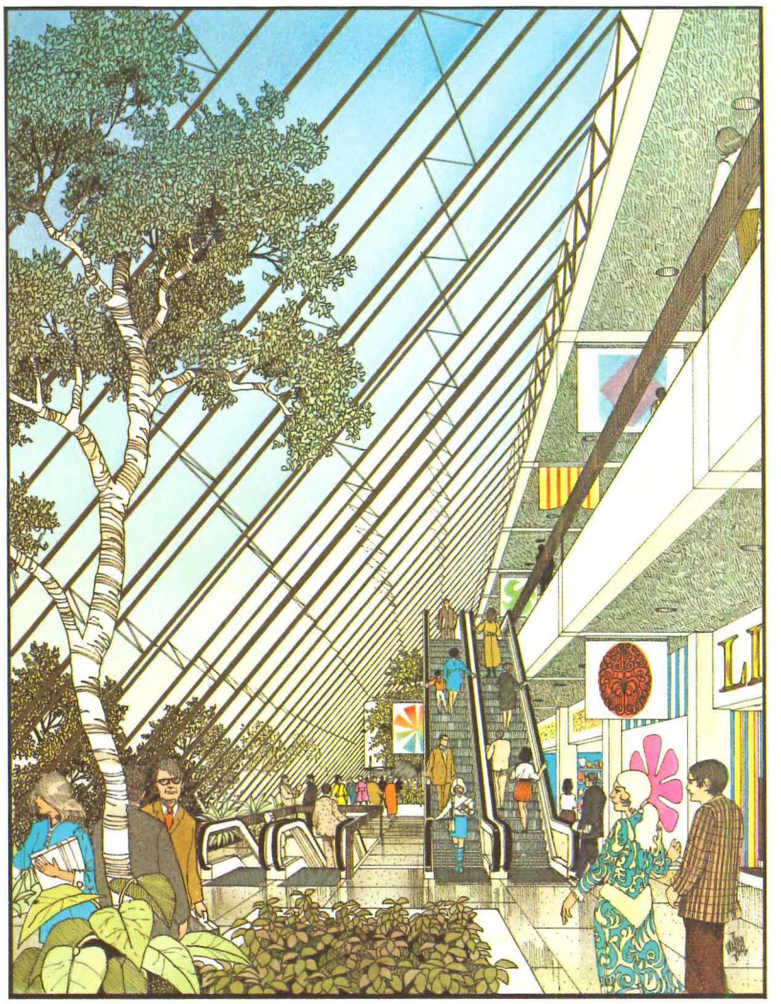
Neuhaus + Taylor designs a beehive of activity.



This projected suburban megastructure includes high and low rise office space, a motel and a regional shopping center. A widely diverse mix to make the structure a center of activity throughout most of the day and evening hours.

In its two 21-story towers, Neuhaus+ Taylor of Houston, Texas, provides a total of 170,000 square feet of office space. Faceted bay windows make every office a corner office. Vision panels for these bay windows are 1" Thermopane® insulating glass with golden Vari-Tran reflective coating on the airspace surface of outer light. Spandrels are ¼" tempered golden Vari-Tran.

Vari-Tran turns away most of the sun's heat and glare and would greatly reduce the initial cost of air-conditioning equipment. Plus the cost of operating it. A representative case history: Edison Plaza Building, Toledo, Ohio, using Thermopane with Vari-Tran coating compared with single regular glass. Savings in cost of air conditioning *and glass:* $123,700. Annual reduction in owning and operating costs: $39,900.

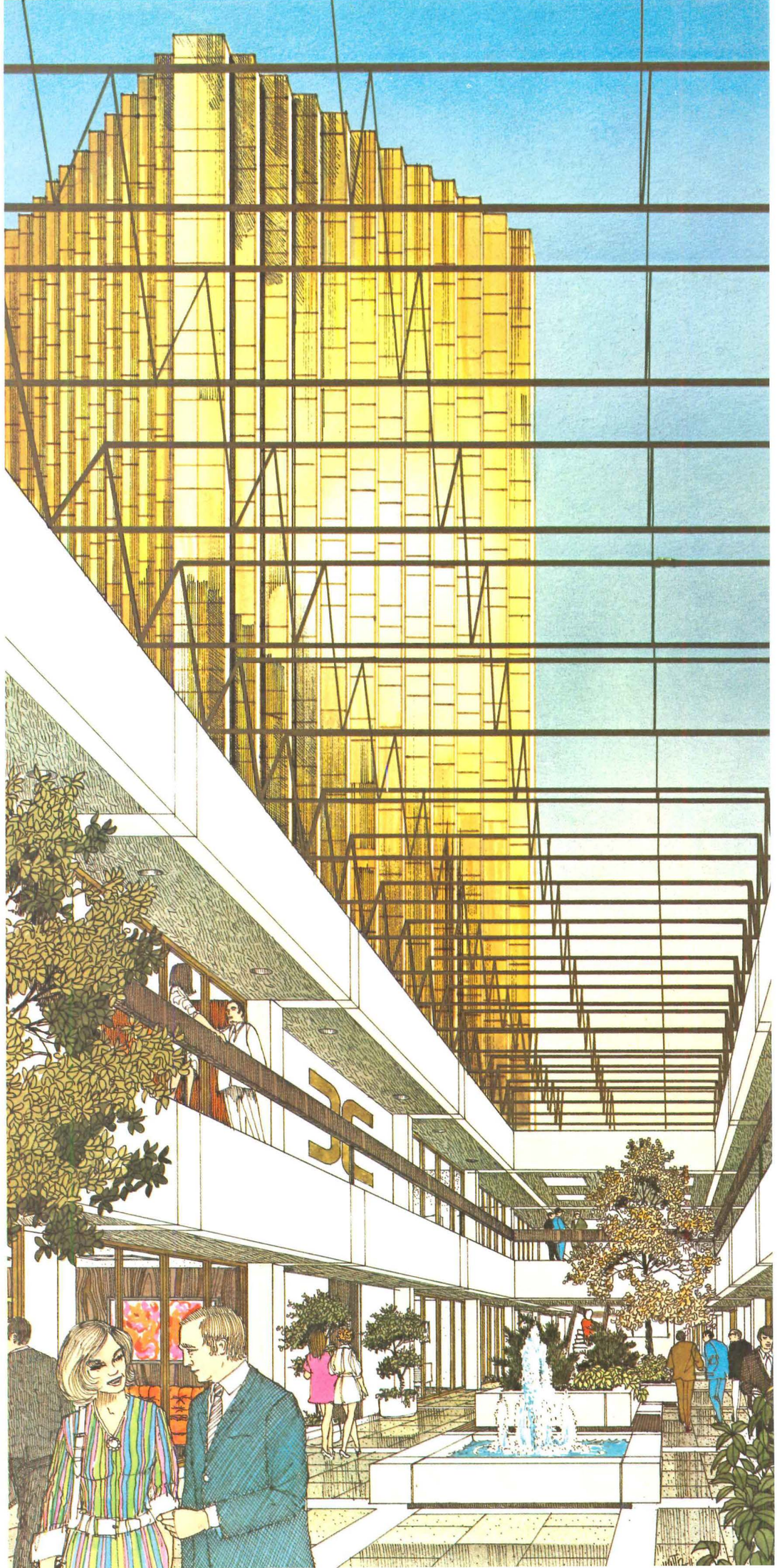
Alternating with the vision panels are solid panels of lightweight precast concrete faced with travertine. These alternating panels of glass and travertine from the base to the top of the towers give a striking sense of verticality to the design. The champagne color of the travertine combines with the Vari-Tran to lend a softly modulated golden tone to the towers.

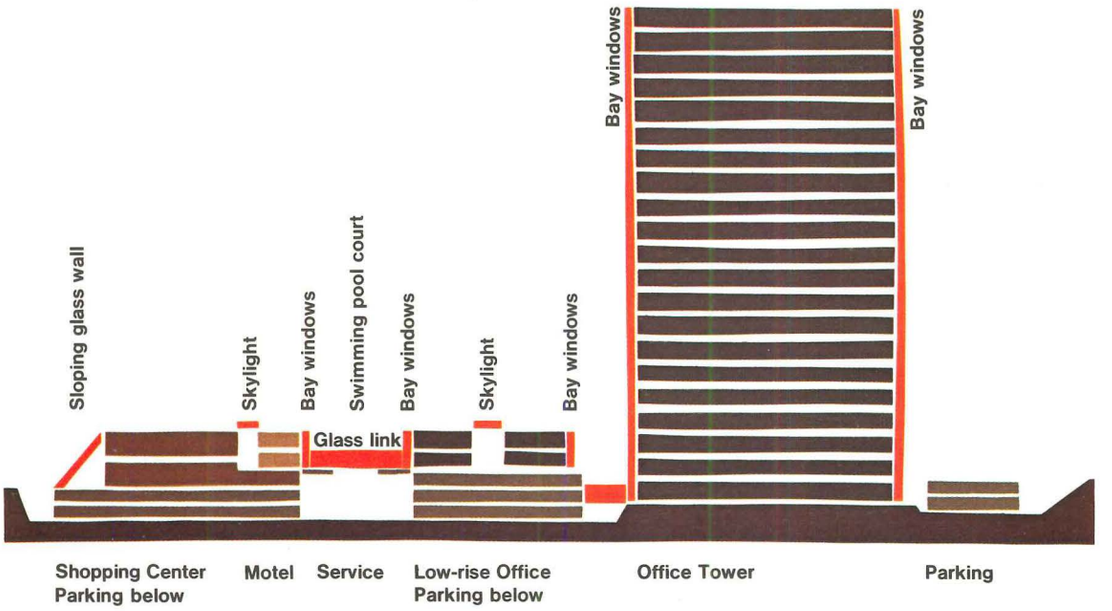
391,000 square feet of additional office space are located in a low block adjacent to the towers. Within the block is a "private sky" that runs for more than a quarter of a mile. It's a two-story, sky-lighted, air-conditioned greenway. The skylight would be ½" laminated glass using tempered golden Vari-Tran. It has the reflective qualities to cope with all-day exposure to the sun.

Parallel to the low-rise office block is the linear motel and retailing complex. Another covered walkway with a private sky separates the motel from the shopping center. Pedestrian bridges tie the office buildings, motel and stores together into a unique whole.

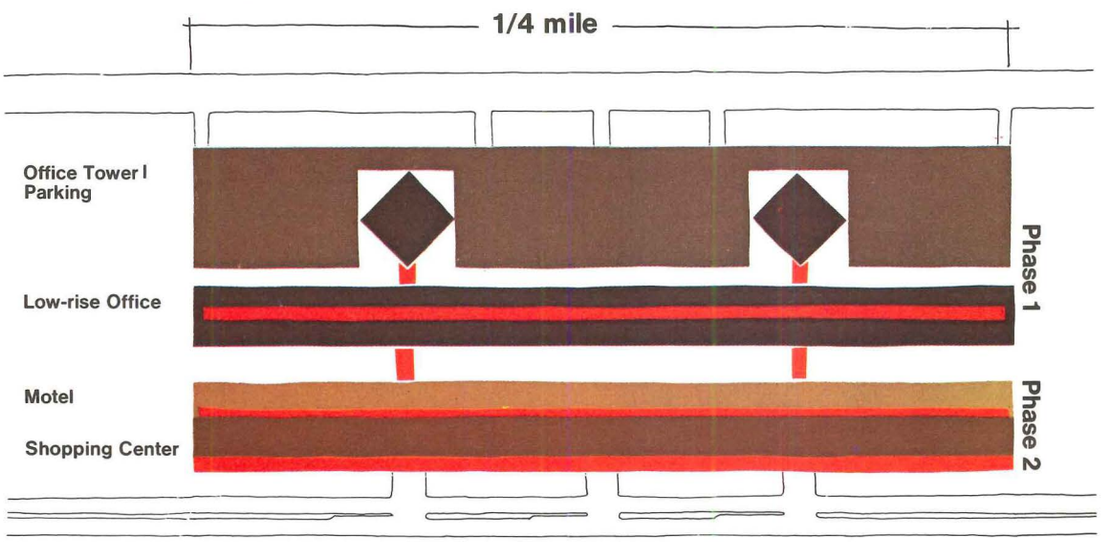
A sloping wall of ½" laminated glass using tempered golden Vari-Tran runs the full length of the shopping center along its major road frontage. It encloses a 32-foot-high garden space that serves shops on two floors. Two levels of parking are below.

Creatively and functionally, golden and silvery Vari-Tran coatings have unlimited potential. Both come in three heat and light transmittances, 8%, 14% and 20%. For more details, write **Architectural Construction Department, Libbey-Owens-Ford Company, Toledo, Ohio 43624.**





Suburban Megastructure **Cross Section**



Suburban Megastructure **Plan**

Talk with an L-O-F Architectural Construction Specialist about your next project. Whether it's residential, commercial, industrial or institutional. Or call your L-O-F Glass Distributor listed under "Glass" in the Yellow Pages. Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43624.

PLATE/FLOAT GLASS
Parallel-O-Plate/Float®, 3/16", 1/4"
Parallel-O-Grey®, 13/64", 1/4"
Parallel-O-Bronze®, 1/4"
Heat-Absorbing Float, 3/16", 1/4"

HEAVY-DUTY PLATE GLASS
Parallel-O-Plate®, 5/16" to 7/8"
Parallel-O-Grey®, 3/8", 1/2"
Parallel-O-Bronze®, 3/8", 1/2"

LAMINATED SAFETY PLATE/FLOAT GLASS
with Vari-Tran® Coating

INSULATING GLASS—Thermopane®
Regular, tinted or with Vari-Tran Coating

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WINDOW GLASS

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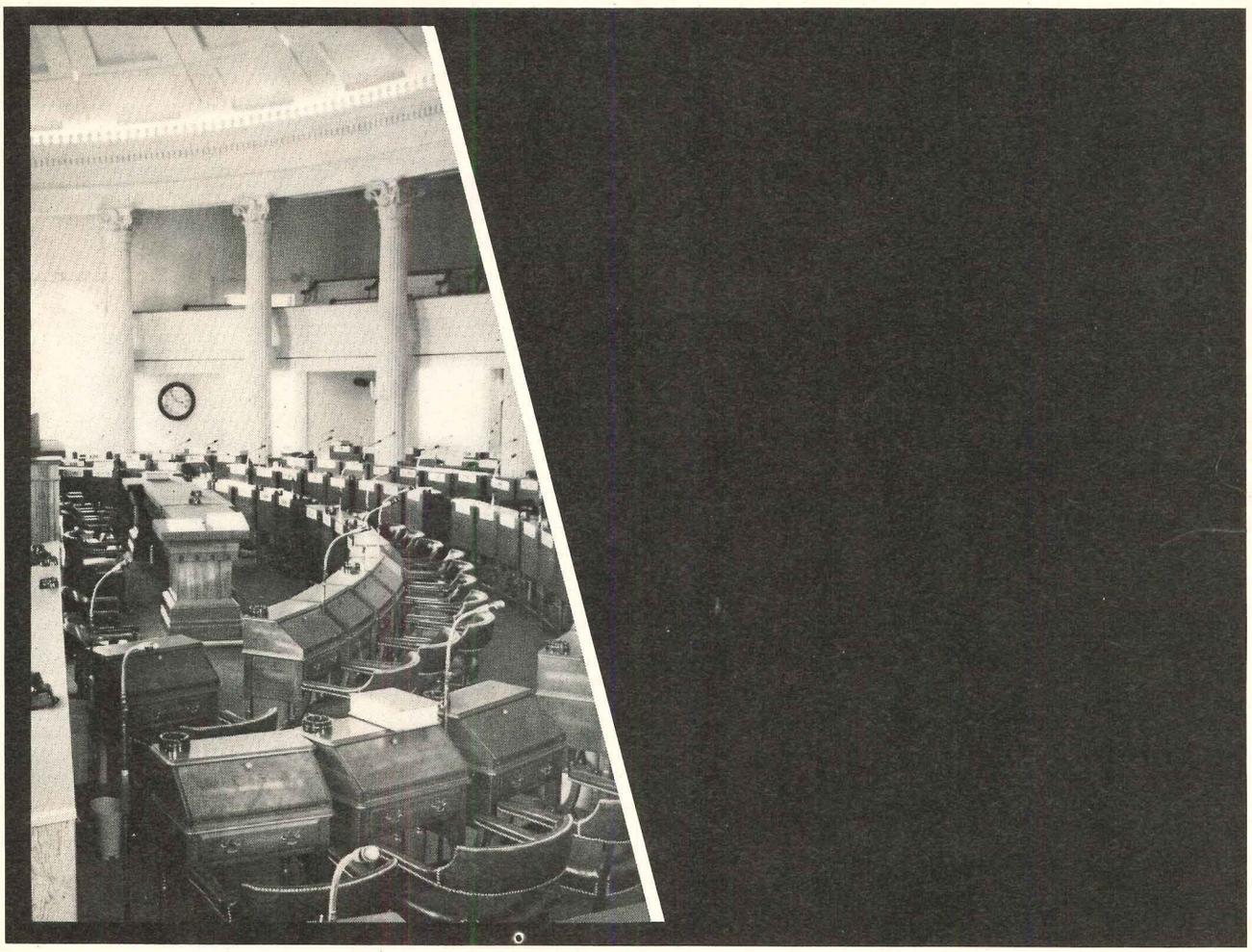
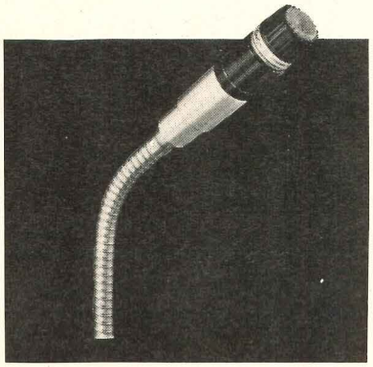


Con-Con to Congress



Nowadays, history isn't written, it's spoken . . . and verbal clarity is essential wherever people meet to discuss the issues of the day. From coast to coast, from town halls to the halls of Congress, you'll find Shure microphones in the really critical, prestigious sound reinforcement installations. Case in point: when the Illinois Constitutional Convention ("Con-Con"—see photo above) met to create the first new state constitution since 1870, a total of 65 Shure Unidyne III microphones were at hand to assure a clear, intelligible voice for each delegate. The Unidyne III was right for Con-Con, and there's a Shure problem-solving microphone right for every installation. Talk to your sound specialist, or write:

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222 Hartrey Ave., Evanston, Ill. 60204

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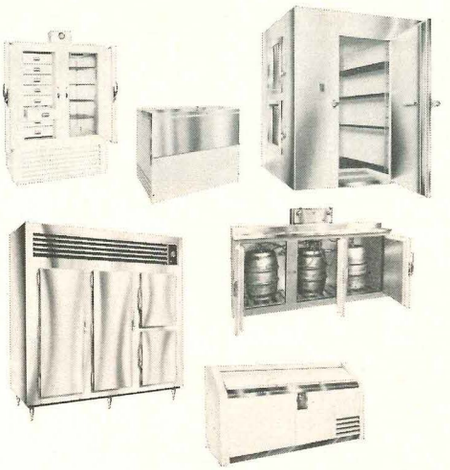

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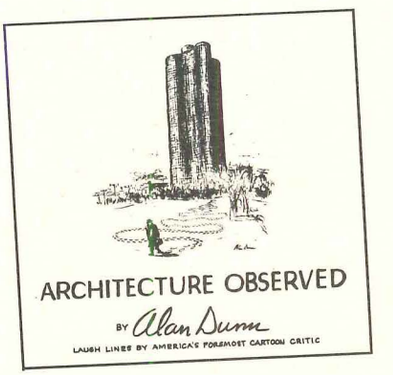

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Or else we replace the entire carpet, free of all charges, including the cost of installation.

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We knew how to blend acrylic-modacrylic or nylon with Zefstat anti-static metallic yarn during yarn production so that you wouldn't see it or feel it.

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Zefstat is a registered trademark of Dow Badische Company.

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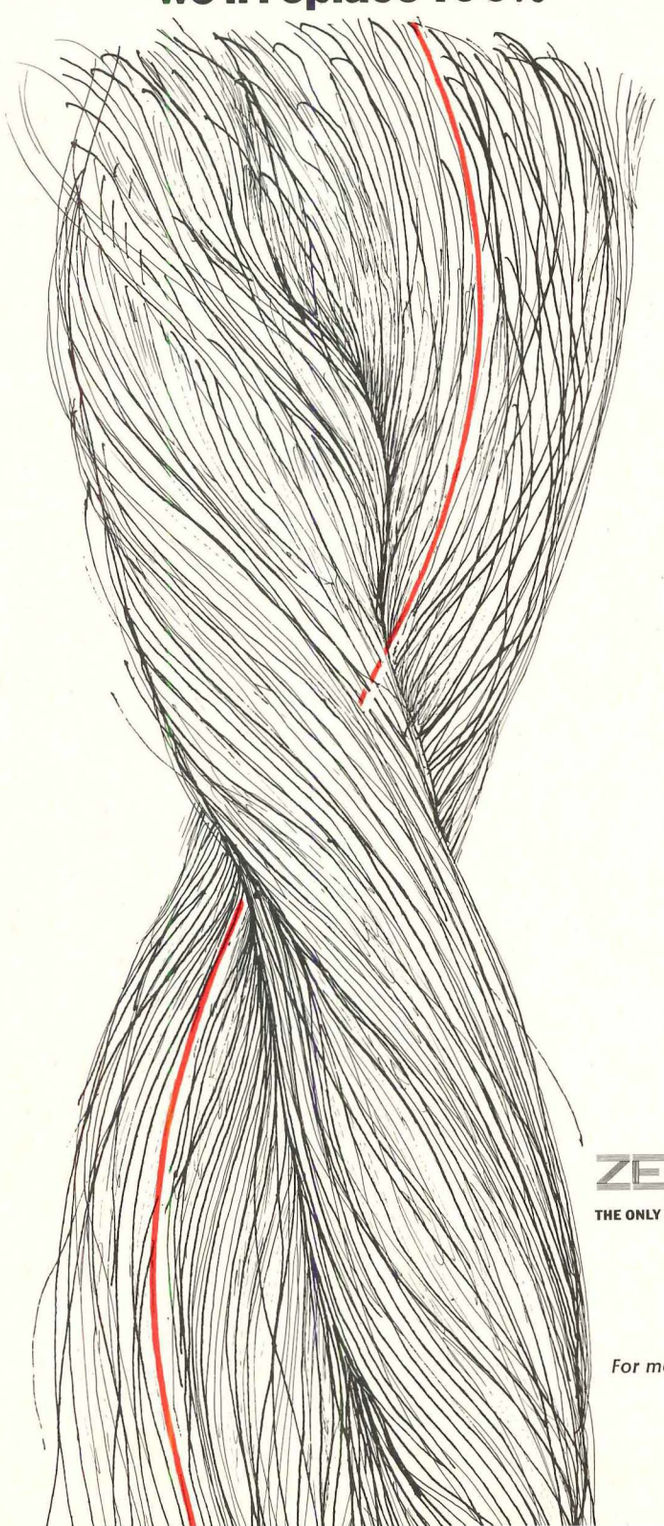

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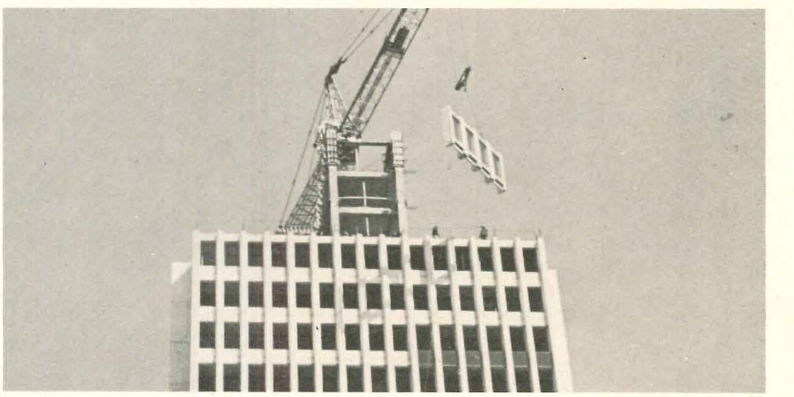
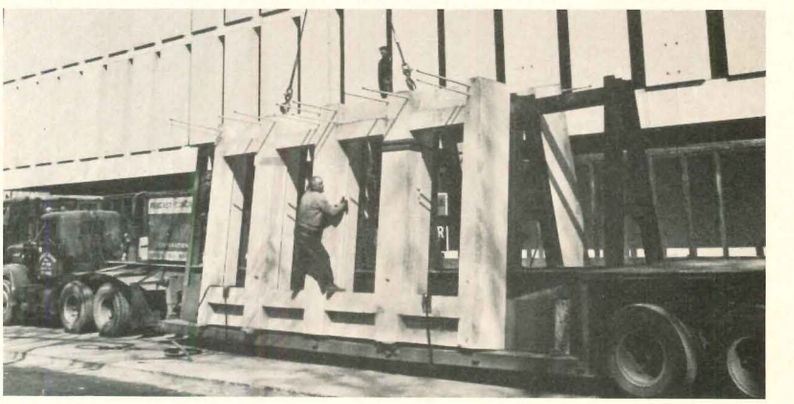
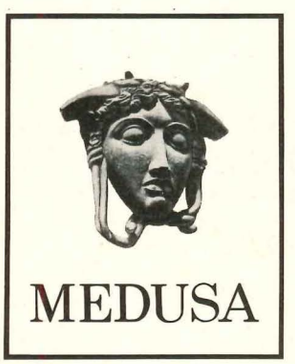
By combining structural and architectural design requirements, a need is fulfilled with one product. Medusa White Portland Cement with its uniformity provides color control, whether for pure white or tinted concrete. Medusa White also provides compressive and flexible strengths equal to gray cement.

Specify Medusa White with confidence. Get complete data. Write Medusa, P.O. Box 5668, Cleveland, Ohio 44101.

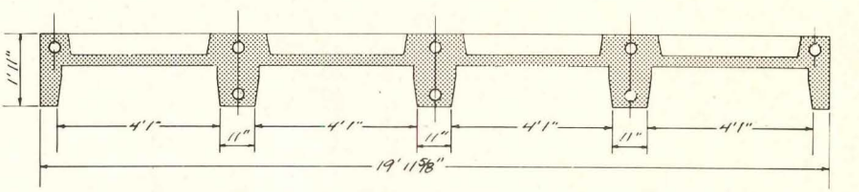




MUTUAL BENEFIT LIFE INSURANCE CO., PHILADELPHIA, PA.
Architects: Nowicki and Polillo of Philadelphia.
Eggers & Higgins, New York City, New York
Engineers: David Bloom Associates, Philadelphia.
Robert Rosenwasser, New York City, New York
General Contractor: E. Frankel Enterprises, Philadelphia.
Precast Producer: Formigli Corp., Philadelphia, Pa.



Precast load bearing units are 19'-11⅝" wide x 11' high. Average weight 12 tons. Spandrels are covered with black glass to accent vertical mullions.



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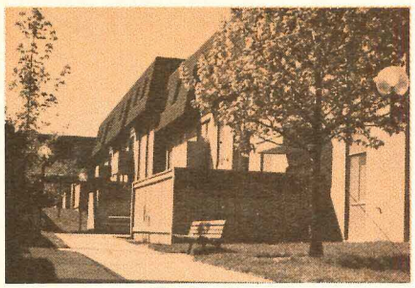
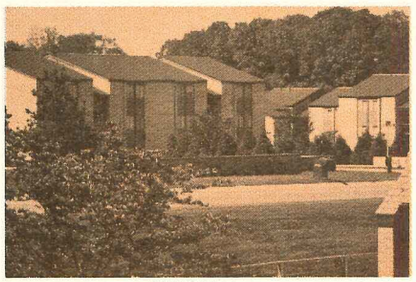
Montgomery Village built and developed by Kettler Brothers, Inc., Gaithersburg, Md./McQuay Representative: D.M.R. Assoc., Inc., Washington, D.C.



The Hamlet

Walker's Choice



Mills Choice

Montgomery Village includes 5 single family dwelling, 3 townhouse and 3 apartment communities.

1,945 ideal apartment environments in Montgomery Village...all McQuay®

When Kettler Brothers, Inc. designed the New Town of Montgomery Village in Maryland, they wanted to provide a living environment that was as perfect as possible.

Outside, they created an atmosphere of open spaciousness, including schools, an enclosed shopping mall, complete recreation facilities, a lakeside park and a country club.

Inside, there is a McQuay AVD Seasonmaker® fan coil unit in each of the Village's 1,945 apartments.

"We designed Mills Choice, our first apartment community, specifically for McQuay equipment," said George Aubin, vice president of multi-family housing for Kettler Brothers. "We were so satisfied with its performance and reliability that we continued with McQuay in The Hamlet and Walker's Choice, the two apartment communities that followed."

The AVD Seasonmaker fan coil units provide ideal indoor environment. Tenants can select their own comfort level, regardless of what's happening in other apartments. Silent in operation, the Seasonmaker units have a five speed switch for complete control of air movement, whether heating or cooling. And they're easy to install, easy to maintain.

Whether you need a single unit or an entire system, look to the leader, McQuay. For complete information, contact the man for all seasons, your McQuay representative. Or write McQuay Division, McQuay-Perfex Inc., Box 1551, 13600 Industrial Park Blvd., Minneapolis, Minn. 55440.

Look to the systems leader . . .

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McQUAY-PERFEX INC.

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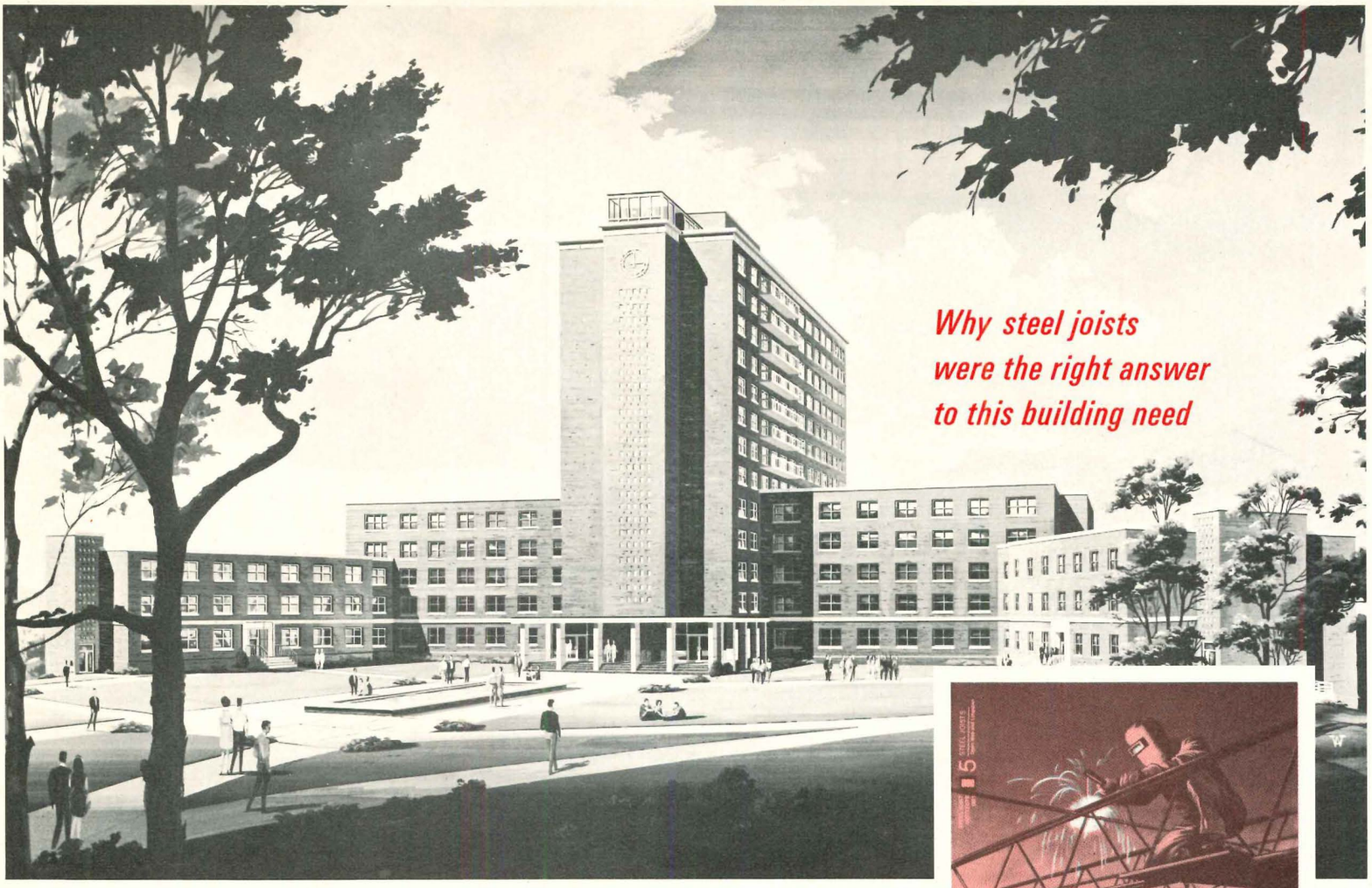
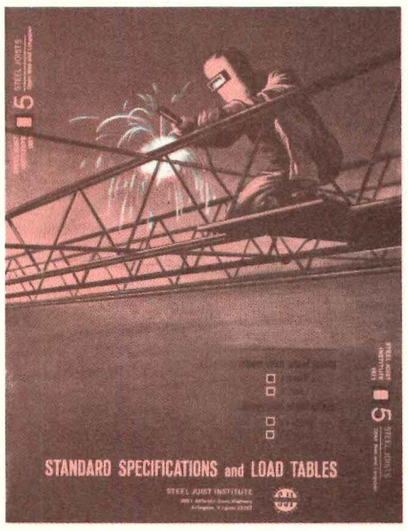


Why steel joists were the right answer to this building need



20TH DORMITORY IN 20 YEARS

ALL WITH OPEN WEB STEEL JOISTS

"For the past 20 years, we have designed an average of a dormitory a year, using steel joists for our floor construction," says a representative of Thompson and Payne, Architects and Engineers, of Roanoke, Virginia.

"Our most recent design, shown here, is Muse Hall, the new dormitory and dining hall at Radford College, Radford, Virginia.

"We have found the steel joist floor system among the most economical to use in average dormitory construction. It affords speed of erection, reduces dead load to be carried, affords space between floors to run electrical conduit and heating lines.

"On this job, the general contractor installed the structural frame two floors at a time, and came right behind with his steel joists, steel deck and concrete slab. His workers were never more than two floors above a floor slab at any one time."

Speed of erection, lower initial cost, versatility—these are some of the many benefits *you,* too, can enjoy with open web steel joists. Whether it's a dormitory or any other type of high-rise building, you'll be time and money ahead when you specify and use open web steel joists.

For the complete story on these unique structural members, send coupon now for our Specifications and Load Tables for Open Web Steel Joists and Longspan Steel Joists.

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Arlington, Va. 22202

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Please send me a copy of your Specifications and Load Tables.

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Houston International Airport Houston, Texas

Architects: Golemon & Rolfe, Houston; Pierce & Pierce, Houston

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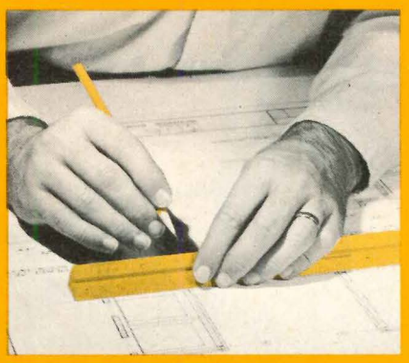
mind if we reduce one of your dimensions?



shorter passenger destination time than ever before is delivered by HAUGHTON'S new 1092-IC elevator control system.

Change your building!? You bet! The time dimension—passenger Destination Time—will be the shortest you've ever known.

It happens this way: Microminiature integrated circuits pack 1092-IC with more electronic logic than any conventional system can provide. Every factor affecting passenger service is sensed and responded to—instantly. More than double the "alertness" of any other system.

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You're familiar with the costs of launching new products. What you have to pay for development, packaging, mass production and distribution.

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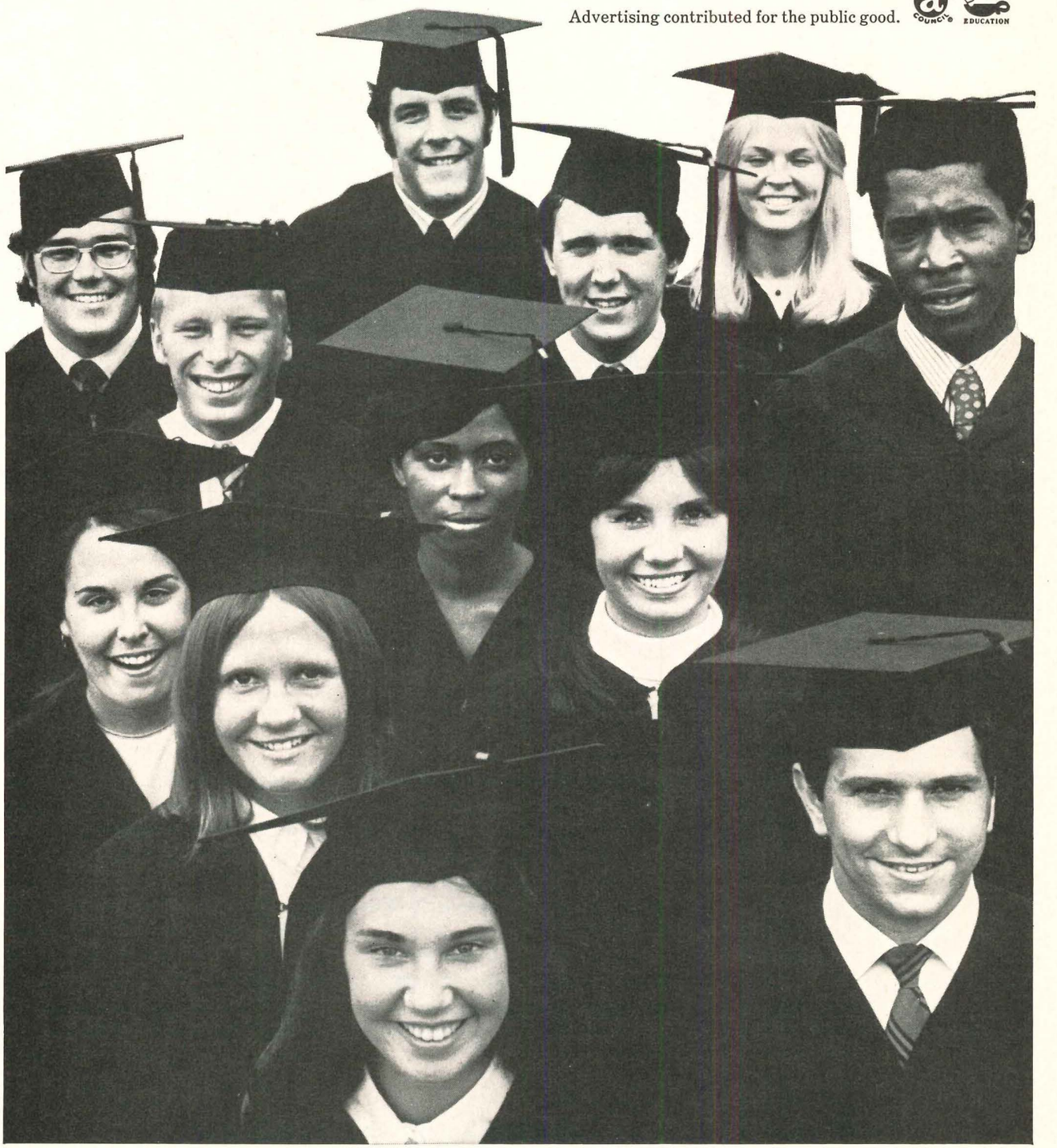
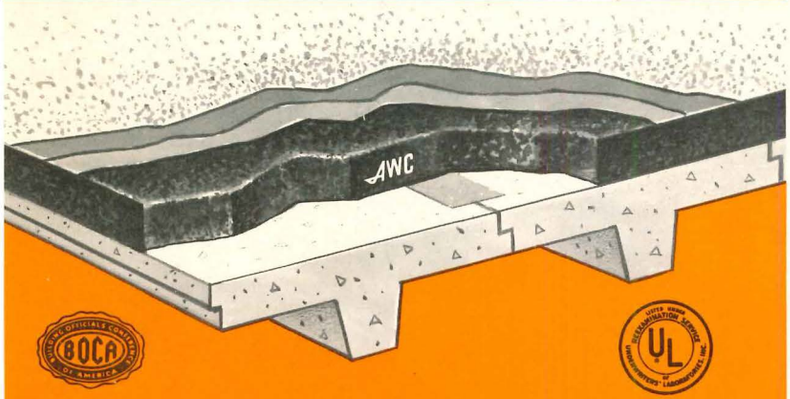
COUNCIL FOR FINANCIAL AID TO EDUCATION

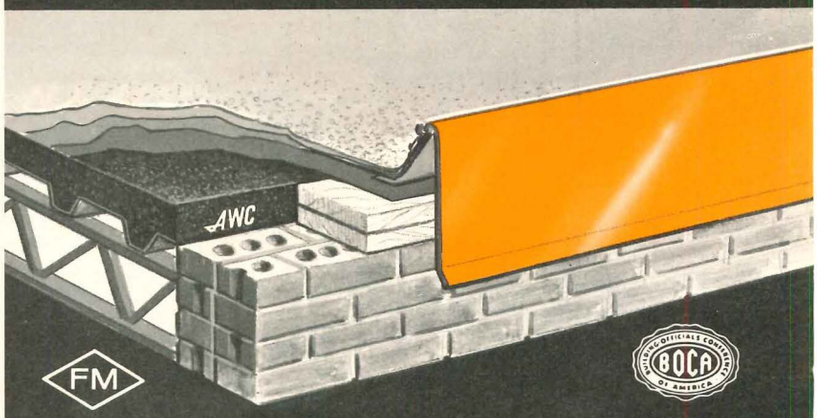


Four typical insulation systems that demonstrate All-weather Crete's multi-functional capabilities.



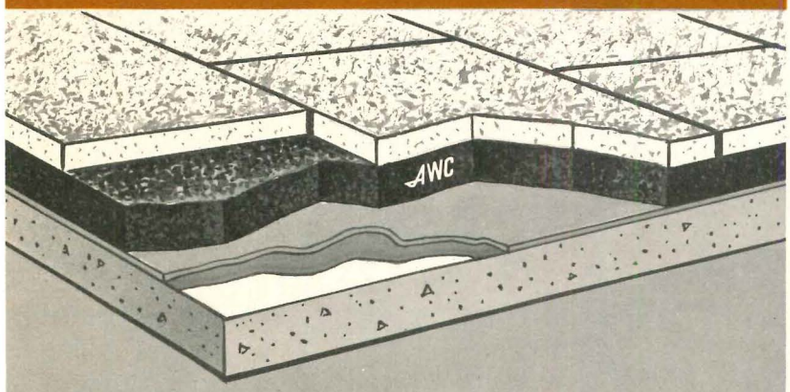
2 HOUR FIRE RATED ROOF DECK

All-weather Crete seamless insulation (K factor .40) is applied over pre-tensioned concrete units. U/L Design No. RC19. It can be sloped to drains, eliminates camber and uneven joints. This provides a smooth even surface for immediate conventional built-up roofing.



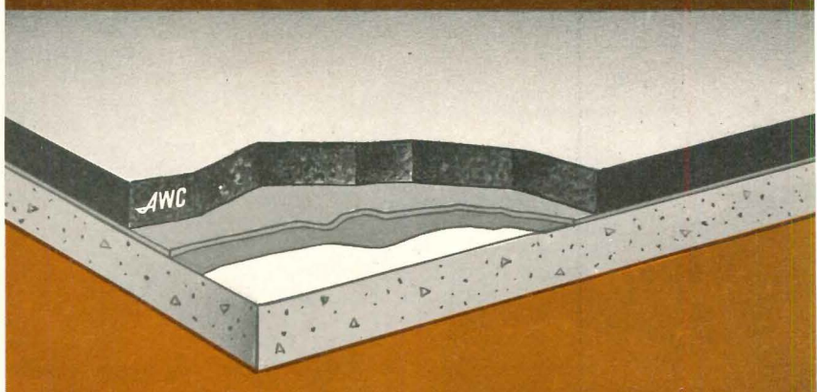
CLASS 1 METAL DECK CONSTRUCTION

This tested roof deck insulation system meets Factory Mutual requirements for fire hazard and wind resistance. With special Silbrico adhesive, it is an approved U/L deck (No. 360 R 13.15) The Silbrico Fascia System shown above also meets Factory Mutual roof perimeter flashing requirements of Data Sheet 1-49 to resist wind uplift of 60/Lin. Ft. of wall. The perfect combination for maximum protection.



PLAZA DECK

There are eight widely used All-weather Crete plaza systems. Not only does AWC provide the most effective available insulation, but it protects the water proofing membrane keeping it ductile and active for the life of the system.



ROOF DECK OF THE FUTURE

Over a decade of designing, testing and practical application have produced this new Silbrico system. All-weather Crete is placed over the water proofing membrane protecting it from severe thermal change and climatic elements which are the major causes of roof failure. All-weather Crete insulation has the properties of being unaffected by these severe conditions. Consult Silbrico Corporation regarding this new concept.

For complete information, specifications and detail diagrams regarding these and many other successful AWC systems, write Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525. References: Sweets catalog and Spec Data.

SILBRICO

All-weather Crete®

For more data, circle 126 on inquiry card

ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1971 Sweet's Catalog File as follows.

A Architectural File (green)
I Industrial Construction File (blue)
L Light Construction File (yellow)
D Interior Design File (black)

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Denver 80202
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Detroit 48226
Richard D. Thielmann, 2600 Penobscot Bldg., (313) 962-1793

Houston 77002
Angus A. Macaulay, 2270 Humble Building, (713) 224-8381

Los Angeles 90017
Robert L. Clark, 1125 W. Sixth St., (213) 482-5450

New York 10036
Donald T. Lock Ted Rzempoluch, 330 W. 42nd St., (212) 971-3583

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Pittsburgh 15222
Edward C. Weil, 4 Gateway Center, (412) 391-1314

St. Louis 63011
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